

Anatomy of a megadeal

Inside BellSouth's outsourcing pact with EDS and Andersen. Page 64

Low-wage inmates
Prisoners get data-entry, call center jobs. Page 24



Tried-and-true
Award winners delivered business value, not high tech. Page 41

COMPUTERWORLD

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Detroit, autobahn merge

► Key to DaimlerChrysler success: IT integration

By Bob Wallace
and Randy Weston

AS PART of their megamerger, Chrysler Corp. and Daimler-Benz AG cited the chance to share the load — from plant capacities to purchasing systems — for competitive gain. But how far and how fast the automakers can integrate their information systems will determine the quality of their ride, observers said.

The companies said they expect sharing each other's facilities, technologies and distribution systems would save \$1.4

billion in the merger's first year. Sharing engineering and manufacturing know-how in the combined DaimlerChrysler would save another \$3 billion in three to five years.

These technologies come in distinct layers for the automakers, which are seeking a \$35 billion merger as DaimlerChrysler. Besides the back-office systems, the manufacturers have vast supply-chain, distribution networks and each has its own computer-aided design and engineering operations built on

Merge, page 16

At a glance:
Chrysler Corp.
Headquarters: Auburn
Hills, Mich.
Employees: 121,000
1997 revenue: \$55.6B

Daimler-Benz AG
Headquarters: Stuttgart, Germany
Employees: 300,000
1997 revenue: \$46.9B

Gates pulls out all the stops



Compaq plans huge layoffs at Digital

By Jayshree Vijayan

REPORTS THAT Compaq Computer Corp. will lay off about 15,000 Digital Equipment Corp. employees after completing its planned acquisition underscore just how wrenching the next few months could be for Digital customers.

The deeper-than-expected job cuts, confirmed by sources at both Digital and Compaq, renew fears about the fate of several Digital products and business units and put Compaq's recent revenue struggles in the spotlight (see related story, page 94). It also brings to the surface simmering concerns about Compaq's plans to provide the same level of support and services Digital customers have grown accustomed to.

Layoffs at Digital have been imminent ever since Compaq announced its \$9.6 billion bid to purchase Digital in February.

Job cuts, page 94

Tech revamp recharges utility

By Sharon Gaudin

WHEN BOB BEST, CEO of Atmos Energy Corp., sits down with his board of directors this week, he will say the \$45 million dropped into a two-year information technology overhaul has turned Atmos into a different company.

It's now a business that can integrate an acquired company in three months instead of five years. It can talk with customers 24 hours a day and tell them service will be there at 3 p.m. instead of "sometime Saturday." Atmos executives credit the

Tech revamp, page 94



HP tries, tries again on Web

By Jayshree Vijayan

HP will make yet another bid to hammer home an electronic-commerce strategy. Even its own executives acknowledge the message is far from home base.

The Palo Alto, Calif.-based company is scheduled to unveil a range of World Wide

Web products that focus mostly on "Web QoS," or quality of service. The idea is to give Internet service providers and large corporations a set of technologies and integration capabilities that will help them provide predefined and predictable Web service to users.

The technologies will allow

HP, page 16

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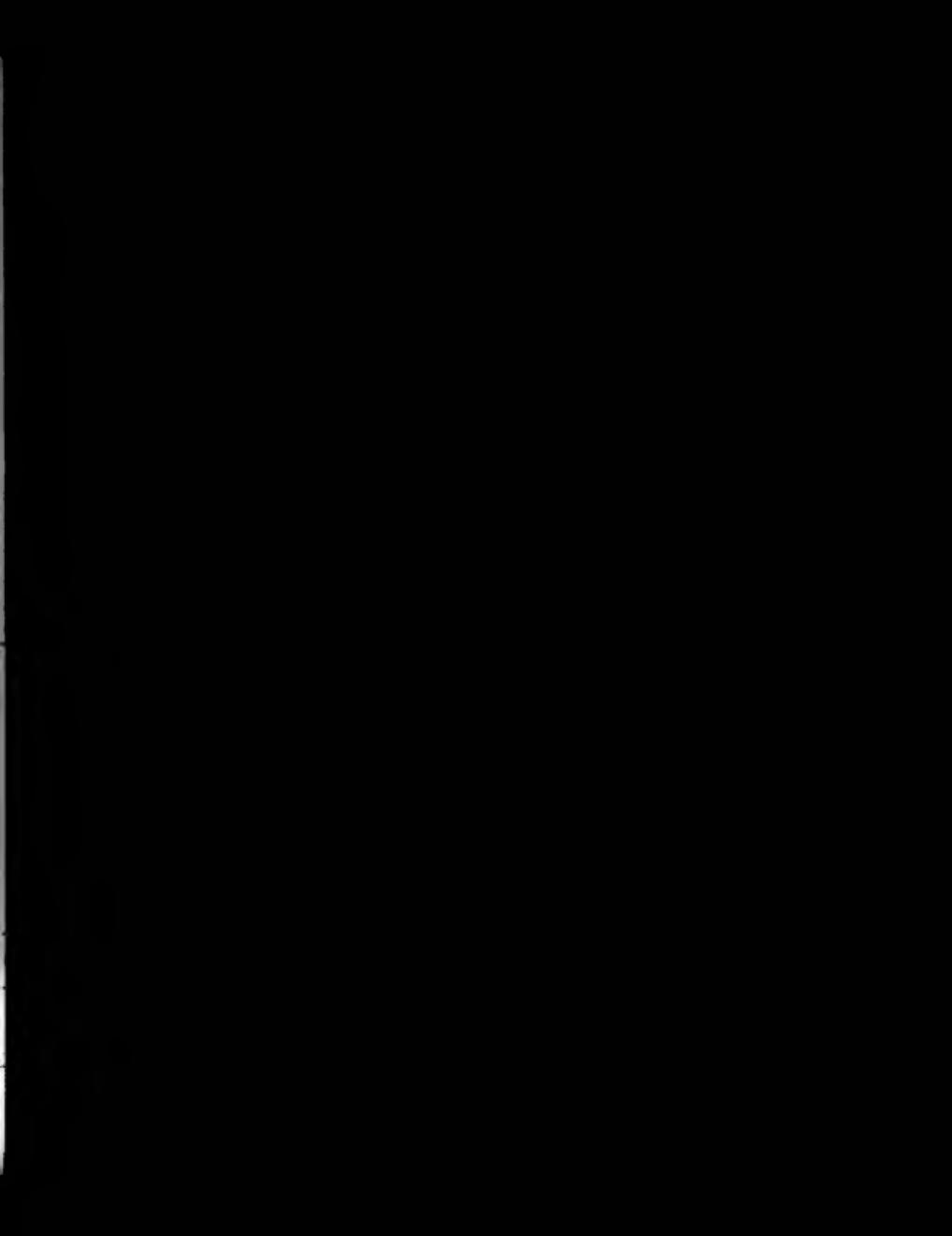
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UP FRONT

Future shock?

May 24, 1998 — Stock markets continued a free fall today as poor economic figures sent investors running for the exits. The Commerce Department revised its GDP estimate to show economic growth at a paltry 0.5% for the fourth quarter.

Analysts said the culprit is Windows 98, or rather, the lack thereof. The Justice Department continues to tie up the release of Microsoft's next-generation operating system in litigation. The prediction from Microsoft CEO Bill Gates is that May's delay in Windows 98 would hurt the U.S. economy come true.

Across the U.S., businesses report productivity declines because PC users can't access Windows 98's advanced features.

"The lack of Universal Serial Bus support is just killing us," said the CIO of a large financial services firm. "It's taking us up to 10 minutes to install a printer. The glass is so thick here, you could cut it with a knife."

"We have been camping at the bit to get the browser integrated with the operating system," complained another IS executive. "Now

we just have to go ahead and download Internet Explorer manually. Our productivity is down the drain."

The tragedy is playing out at computer retail stores, where dealers report buyers have stopped placing orders because they can't get Windows 98 goodies such as faster application load times and support for video cameras. Computer makers also are reeling from having to cancel advertising campaigns based on breakthroughs such as faster system shutdowns, MMX enhancements and support for bigger hard disks.

The Clinton administration is plowing with the Justice Department to fix the injunction on Windows 98 sales. "I mean, if you can't view your files in a Web browser, what reason is there to buy a PC?" an administration spokesman said.

Paul Gillin, editor
Internet: paul_gillin@cox.com

THE FIFTH WAVE



E-Mail Rich Thomas at thetwave@pacifier.com

PRIVACY INITIATIVES

Group	Program
TrustE	Grants a seal to member organizations that disclose privacy policies. Members also are subject to compliance audits
Better Business Bureau Online	Reportedly working on a Web privacy component for members' Web sites
World Wide Web Consortium	Developing technology that will let consumers set their own Web privacy preferences
IBM	Expected to announce a privacy alliance
Direct Marketing Association	Offers free help on its Web site for developing an online privacy policy

Web sites rush to self-regulate

► World Wide Web privacy issue heats up

By Sharon Machlis

A SERIES OF looming government deadlines is heating up the Internet privacy debate, as industry leaders scramble to show that self-regulation is working before the patience of regulators wears out.

Almost a year after the White House announced support for voluntary guidelines, key federal agencies are preparing to report on the state of consumer privacy on the World Wide Web. Also in the mix are pending privacy guidelines in Europe that could have a worldwide impact.

"It's important for some real progress, not just promises, to be visible," said Esther Dyson, editor of the "Release 1.0" industry newsletter. "The future of the Internet and its governance hangs in the balance."

PRIME CONCERN

At issue are what type of data Web sites collect from their visitors, what companies do with such information and how consumers can find out what happens to those records.

"There has been growing sentiment that something has to be done," said Harriet Pearson, director of public affairs for IBM in Washington. IBM has been working with about 50 other companies and organizations to launch a privacy alliance and prove that corporate America can protect its customers' rights without new laws.

Though top White House aid Ira Magaziner said he backs letting industry develop privacy guidelines for the Internet, others within government aren't convinced that is desirable.

Early next month, the U.S. Federal Trade Commission (FTC) will report to Congress on its audit of 1,300 Web sites. The agency is investigating

whether sites post information on how they collect and use consumer data. It also is checking whether users can access their data and prevent records from being shared outside a site.

"It's going to be a report card on self-regulation," said David Madine, associate director of credit protection at the FTC. "If it hasn't worked, it's been pretty clear [we] would consider legislative options."

And this summer, one year after the Clinton administration announced the Framework for Global Electronic Commerce, the U.S. Department of Commerce will submit a report to the White House that evaluates how the plan is working.

Further complicating matters, the European Union in October will implement tough data protection policies that require "adequate" privacy safeguards for any computer data sent out to other countries.

It is unclear how that will affect the way European consumers interact with U.S.-based Web sites. Although in theory the EU could seek to bar its citizens from accessing sites in countries that don't have tough privacy rules, U.S. officials have

been negotiating with the EU on how the so-called Data Directive will be interpreted on the Internet.

As the privacy issue moves to the front burner, more companies are posting privacy policies on their Web sites and making their policies more prominent. Lyon, Inc., for example, posts what it calls a privacy "vow" that it won't share its data on consumers and it is moving to include links to the statement on every page of its site, not just a select few.

"It's a significant concern for a majority of Web users," said Jeff Snider, general counsel at the Waltham, Mass.-based company. "We want them to feel comfortable they can use our site ... without worrying they're asking for a slew of junk E-mail."

"I think we are up-front," said Jim Massicano, vice president and general manager at Sabre Group's Sabre Interactive in Fort Worth, Texas, referring to its privacy policy on the Travelycious site. "We may sometimes in the future share [data] with carefully selected companies." If that is done, he added, these will be ways for people to get their data out of the program.

Several industry groups are

Web privacy, page 14

Timing

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Many users, The Man in Blues' Rick Smith is content to wait for Windows NT 5.0; he doesn't need it yet. Baltimore, page 27

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Pay for results, not promises

► Integrator brings program to private sector

By Julia King

IMAGINE BUYING A NEW CUSTOM-BUILT home without paying the contractor a nickel until after you lived there a while and made sure everything worked. If it didn't, you would get to keep your money.

That's akin to the kind of new financing arrangement American Management Systems, Inc. (AMS) in Fairfax, Va., plans to extend to commercial users.

The systems integrator already has several such deals in the public sector. State agencies in California, Virginia and Kansas all have so-called "benefits funding" contracts with AMS, whose work in all three states centers on installing new computerized tax collection systems.

In California, AMS is building a \$21 million system to help the state collect more than \$35 million in unpaid personal income taxes.

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sistant executive officer at California's Franchise Tax Board in Sacramento.

What's more, it took AMS only 11 months to complete the system. "The last time we built our own collection system, it took us about six years," Hunter said.

According to John Podlipnik, vice president at AMS, the benefits funding model "would absolutely work" in the private sector.

How benefits funding of systems integration projects works:

- User agrees to a fixed project cost and deadline but pays nothing up front.
- User and AMS agree on the amount of revenue new system should generate
- User pays AMS after system is installed. Revenue begins to come in

"The most obvious application on the commercial side is credit-card collections," he said.

Podlipnik said that much of the software AMS now is installing at state tax agencies originated within the company's banking and financial services practice.

ADVANTAGES

Officials said it is also safe to assume that companies in the private sector could reap some of the advantages of benefits funding state agencies have enjoyed.

But it's a gamble that already has paid off in a small way:

In a 1995 pilot project, a \$6 million system AMS installed to help California collect back taxes from banks and corporations paid for itself several times over in less than 12 months.

"We had expected an ongoing return of \$7.4 million a year, and it got us \$42.6 million in new revenue the first year of operation," said Alan Hunter, as-

By not paying for the services up front, you get two benefits," Hunter said. "First, you have given your business partners the incentive to perform very well and on time."

The other big advantage is largely political. Legislators find it easier to approve technology projects that are self-funding than to use budget appropriations that could have been used for social programs, Hunter said. □

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Introducing Jasmine™ Objects @ Work™

Get lawyers, insurers to sell security plans

By Laura DiDio
New York

Want to share more corporate dollars for network security products and resources?

Enlist the aid of company lawyers and insurance carriers, who can graphically demonstrate the legal, regulatory and financial risks of lax security.

That's the advice of security managers at 15 major corporations, who were among 150 user firms in attendance at last week's conference of the New York Metropolitan Chapter of the Information Systems Security Association (ISSA).

"Security still does not sell well with upper management in most businesses today," said Gary Lynch, research director at Gartner Group, Inc. in Stamford, Conn. Lynch delivered the keynote speech at the conference.

Gartner Group recommends corporations spend 5% to 8% of their total information technology budget on security products, resources and personnel. But most companies allocate only "about 1% of their IT budget to security," Lynch said.

GETTING THE GOODS

The elite users at the ISSA conference had several practical tips for lobbying for more funds, including the following:

- Point out any regulatory and privacy issues that impact the business.

For example, the European Commission will soon require multinational companies to protect the confidentiality of personal data on their networks.

"In a worst-case scenario, if we didn't comply, we could lose our ability to do business in certain countries," said Jag Jagtiani, vice president of information systems at Sotheby's, Inc., an international auction house based in New York.

"And if the privacy of our customers or business partners is compromised because of a successful hack attack, we could be open to all sorts of liability, not to mention the lost trust," Jagtiani said.

"I can't imagine any CIO or upper-level manager ignoring security when you lay it on the line like that."

- Do "white hat" hack penetration studies to demonstrate the company's vulnerability.

"It's not a case of whether they'll uncover anything but what they'll uncover," said Michael Redmond, senior manager of risk assessment at Deloitte & Touche LLP, also based in New York.

"Once the vulnerabilities are exposed and a matter of record, 90% of upper managers in our client customers will ante up. They know they'll ultimately be held accountable in the event of a security breach, and that could be a career-ending move," Redmond said.

- Focus on business issues and the security to corporate liability. Do a risk assessment and put a specific dollar figure on the liabilities.

"Be as specific as possible," advised Robert Dabbs, assistant vice president at the Federal Reserve Bank of New York.

"Not all networks are equally vulnerable, not all systems are equally critical and not all data is equally sensitive. Differentiate among the degrees of severity and do a detailed risk assessment of the potential losses to the corporation," Dabbs said. □

Netscape offers directory code

By Carol Sliwa

TRYING TO SEEK the market for its directory server software, Netscape Communications Corp. last week announced plans to release at no charge the source code for its central directory development kit and administration console.

Netscape will provide developers with the necessary application programming interfaces, documentation, sample code and tools to write an application to a general-purpose central directory that supports the

Breaking the barriers

► Network, systems groups integrating with difficulties

By Patrick Dryden

ABOUT THIRTY-FOURTHS of 15 departments are integrating network and systems management functions, according to a new survey, but managers attempting this change say it isn't easy.

The study showed that another 15% plan to build the tools, information, processes and staff that currently handle those distinct disciplines, said Stephen Elliot, an analyst at Business Research Group in Newton, Mass. (see chart).

The goal is better service to users at lower cost by achieving a holistic view of the enterprise.

Thus "systemic thinking" about the entire information systems role enables 15 leaders to deal quickly with user requirements and problems, according to Larry DeBoever, an enterprise architecture strategies analyst at Meta Group, Inc. in Westport, Conn. He said traditional infrastructure roles are merging in mature IT organizations as a "natural evolution."

But several IT managers struggling with this evolution said that breaking down barriers between separate specialists can be difficult and painful.

The main problem is overcoming the "traditional independence" inherent in each group, said Mark Estes, manager of network and desktop services at Clarke American Checks, Inc. in San Antonio.

The Inc. service started pulling together LAN, WAN

Lightweight Directory Access Protocol.

That will eliminate the need for proprietary directories for each application to describe what users can do on the system.

"The proliferation of directories out there is driving users nuts," said Jamie Lewis, president of The Burton Group, a consultancy in Midvale, Utah. "For anybody who's writing directory-enabled applications, this would be worth looking at, because this will save them a lot of time and effort, and that

SEEKING A HOLISTIC VIEW

IS's plans to merge network and systems management

■ Currently integrating

Planning future integration

Investigating integration options

■ No plans to integrate

Base: 250 IS organizations



Source: Business Research Group, Newton, Mass.

and mainframe groups to months ago as part of an overall IT realignment. The goal is to "flatten the organization for better, more consistent service," Estes said, "but we're still getting there."

Typically, each group thinks the others don't know what they are doing," Estes said. After being forced to work together, though, "everyone is starting to understand all the roles."

COMMUNICATIONS

Such improved communication — with users and within IS — was the goal six months ago when Rowe Furniture Corp. combined its network and systems management groups with technical services, said Mohsen Varsanesh, IS director at the manufacturer and distributor in Tysons Corner, Va.

"Users weren't sure which group to contact, and we had gaps in our problem analysis process," Varsanesh said.

Problems merging the once-independent groups haven't been significant, he said, because managers agree on the value of the move and jointly run the new operations unit. And every morning, their teams

must work together to prioritize issues in 30-minute meetings.

"Now we're starting to resolve problems in a more timely manner, and I see more cross-training in the staff," Varsanesh said. For example, systems administrators are becoming more familiar with network bandwidth issues.

At USA Group, Inc., the vast "culture change" from integrating all management disciplines — for both the mainframe and distributed environments — has caused "some bruised and resistance along the way," said Allan Horn, vice president of data center operations at the Indianapolis-based insurer.

But senior management supports this streamlined IS direction, Horn said, and the diverse groups are starting to see advantages.

For example, a common console for monitoring systems and network connections provides "an immediate alert so we can prevent downtime caused by waiting for human intervention," Horn said.

"Our vision is a bridge like on the *Enterprise* where a small first-level support team can view overall performance, deal with some of the specialists' problems and interact with users," Horn said. "We must use experts as experts, not routine troubleshooters; otherwise, it's an expensive waste of high-tech labor." □

Correction

Because of an editing error, a chart ("Destination integration") in the April 6 issue that showed how much companies plan to spend this year on systems integration was mislabelled. The numbers should have read: 55% will increase spending, 35% will keep spending the same and 9% will decrease spending.

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Oracle reheat thin-client pitch

By Craig Stedman
and Randy Weston

WHAT A DIFFERENCE a year doesn't make.

Oracle Corp. last spring was trying to sell users on building applications with its Network Computing Architecture (NCA) and Oracle8 database. A year later, with its database and applications user groups holding back-to-back conferences this week and next, it looks like deus vu all over again for Oracle.

The Redwood Shores, Calif., company can now point to real products, from Oracle8 to two NCA-based versions of its packaged applications. And a half-dozen Oracle users last week said the thin-client approach could relieve many of their PC support pains.

But that doesn't mean people

are falling all over themselves to go down the NCA path.

Oracle and the NCA-enabled applications weren't there fast enough for LG&E Energy Corp., a utility in Louisville, Ky., that



Subaru's Al Capuano:
Automaker probably won't move to Oracle's NCA for another two years

plans to go live with Oracle's bundled financial systems in July.

LG&E eventually wants to build a three-tier NCA setup,

but it is starting with fat clients and doesn't expect to slim them down for a year or more, said Mike Spurlock, director of accounting and reporting at the utility.

"Oracle talks about NCA like it's a present reality, but the general perception of [users] is that it's still a future," said Carl Olofson, an analyst at International Data Corp. in Framingham, Mass.

That was the case when Onsite, Inc., an Internet-based auction house in Menlo Park, Calif., was preparing to install 10.7 NCA by the start of next month. But it has had to keep going back to Oracle for missing pieces of software, putting the plans in jeopardy.

"There probably isn't enough

time to do it [with NCA] at this point," said Kenneth Hapeman, director of Onsite's information technology center.

Instead, the school may install fat-client systems in its finance office and delay going to 10.7 NCA to other users.

now hopes to switch to NCA late this year, he said.

Oracle Applications Release 7.7 NCA finally became available in January. But some users are still having trouble getting the software going.

MISSING PIECES

Subsidiary College in Saratoga Springs, N.Y., is trying to install 10.7 NCA by the start of next month. But it has had to keep going back to Oracle for missing pieces of software, putting the plans in jeopardy.

"There probably isn't enough time to do it [with NCA] at this point," said Kenneth Hapeman, director of Onsite's information technology center.

Instead, the school may install fat-client systems in its finance office and delay going to 10.7 NCA to other users.

Oracle also is leading users on a full-speed-ahead NCA roll-out schedule that may be hard to keep up with, 10.7 NCA as already being released, which is due to be launched at next week's Oracle Applications Users Group conference in San Diego.

And Oracle is talking about a new componentized application architecture planned for next year.

Subsidiary of America, Inc. wants to change its part division's order-entry system to an NCA setup with Oracle8 and Release 7.7 of Oracle's applications. But the Cherry Hill, N.J., automaker just put in 10.7 NCA financials on fat clients.

And Oracle is telling the company it has to keep the two systems uniform to run them on one server, said Al Capuano, a Subaru project manager. As a result, the NCA move may not happen "for another two years now," he said. □

Bad remote access deals suck up savings

► Analysts: Negotiators aren't aggressive enough

By Gauri Girard
ORLANDO

A POORLY NEGOTIATED remote access contract with a service provider could leave your company in the lurch — with poor service levels, lagging performance, minimal security and unexpected add-on costs, said analysts at a Gartner Group, Inc. conference held here this month.

The Stamford, Conn.-based consultancy estimates that over the next five years, 70% of Fortune 500 companies will outsource management of remote-access services and devices, including modem pools and

firewalls. Gartner predicts 20% of those corporations will reap less than half the potential savings expected from outsourcing by failing to get the best possible deal on equipment, staff training, network service design and installation (see chart).

A CULTURAL THING

"It's our general experience [that] the people in networking [and] telecom services aren't aggressive negotiators," said Gartner analyst John Girard. "It's a cultural thing, I don't think wheeling and dealing on large contracts is part of the culture." Overall, many users who do pay attention to contracts are finding that the outsourcing benefits — no more modem pools to manage, no upgrades to worry about — can outweigh the security risks.

Restaurant Consulting Services, Inc. (RCS) in Daventry, Mass., is saving big by using an MCI Communications Corp. service called Remote LAN Dial to manage its modem pools. RCS is an outsourcing that offers sales and inventory tracking services for restaurant chains, including Puddrucker's and John Harvard's Brew House, and

Users can save about 20% by outsourcing remote access, according to The Gartner Group in Boston. For example, it costs an average of \$3,764 per person up front and \$2,844 per person annually to support existing remote access.

Outsourcing costs slightly more up front — \$3,764 per person — but much less annually at \$4,464 per person.

Negotiating tips for outsourcing remote access

DISCOUNTS: Demand discounts on future use, consider 3-to-5-year term, consolidate voice and data

EQUIPMENT: Get central equipment and installation included — a standard package and emerging technology exchange/upgrade option

HELP DESK/TRAINING: Ask for on-site service and periodic on-site training

SECURITY AND USAGE AUDIT: Look for password authentication and a firewall, customizable reports and analysis

SUBCONTRACTORS: Demand full disclosure and audit clauses

SERVICE-LEVEL GUARANTEES: Ask for throughput and latency guarantees, number of lines available and year 2000 compliance

EXCUSE CLAUSES: Should apply to change in ownership, performance problems. Ask for benchmark review and refuse nondisclosure agreements

— Gauri Girard, Gartner Group, Inc., Stamford, Conn.

charges them for network services. Before the deal, RCS barely broke even after spending from \$60,000 to \$80,000 per year to support about 500 remote users, said Christopher Crocker, a senior network engineer at the company.

RCS has since negotiated a month-to-month contract with MCI, locked in discount rates for users who are added to the network and got 40% to 50% bulk discounts on dial-in charges that exceeded their monthly negotiated rate, Crocker said.

"We pay MCI and charge back the clients," said Crocker, who plans to move 2,700 to 4,000 users to the system within 18 months. "We're making a profit now."

— Joshua Norrid, applications

development director at Dallas-based Bristol Hotels & Resorts, also saw the company's remote-wheeling costs dip after outsourcing. "Our \$1.5 million per year in long-distance [charges] went down to \$300,000 a year, which is tremendous," he said.

Now user 20 hotels nationwide are connected via GTE Internetworking's DialLink remote access service. The service gives employees a local phone number to log in to Bristol's corporate intranet.

Bristol's DialLink contract includes the option to cancel at any time; provides immediate page, fax and E-mail notification in case of dial-in failure that lasts longer than five minutes; and offers full-day reimbursement for outages that last more than four hours. □

StorageTek arrays get upgrade

By Nancy Dillen

USERS OF Storage Technology Corp.'s Iomega mainframe array, a product resold by IBM as the Ramac Virtual Array (RVA), are about to get some extra breathing room.

Louisville, Colo.-based StorageTek last week announced an upgrade that will double the available data paths, from four to eight, of any existing Iomega or RVA system.

The upgrade should be available July 1.

MORE SPACE

StorageTek and IBM also said the address space on the RVA will be expanded in the first half of next year from 256 to 1,024 logical volumes.

The added space will extend the usefulness of the RVA's Snapshot replication and data sharing software.

Synchronous remote copy software for the RVA — called Peer to Peer Remote Copy and currently available only on IBM's Ramac, Ramacc and Ramacy platforms — will be available early in the fourth quarter from StorageTek directly and through IBM's distribution channels, IBM officials said. □

Microsoft's Exchange outsells Lotus Notes

► Scalability, groupware support and E-mail focus drive sales

By Barb Cole-Gemolak

FOR THE FIRST TIME in its two-year history, Microsoft Corp.'s Exchange messaging software has outsold market leader Lotus Development Corp.'s Notes in sales.

But analysts aren't yet ready to declare a winner in this horse race.

According to the "Electronic Mail and Messaging Systems" newsletter in Washington, Microsoft sold nearly 3.1 million seats of Exchange during the first quarter this year. Lotus sold only 2.7 million Notes licenses during the same period.

"Exchange has quadrupled its installed base in the past year, while Notes has merely doubled," said Eric Arnum, newsletter editor of "Electronic Mail and Messaging Systems."

Sales of Exchange have soared since the company released Version 5.5, which is significantly more scalable than Microsoft's previous versions.

But the fact that Exchange primarily is an E-mail system on which groupware applications can be layered may be equally as responsible for the product's growth, users said.

EXCHANGE ON THE UPSWING

Product	01/1998	Growth rate
Notes	2.7M	12%
Exchange	3.05M	23%
GroupWise	300,000	3.5%
Netscapes	300,000	1%

Source: "Electronic Mail and Messaging Systems," Washington

"When we made the decision to go to Exchange from [Lotus CC-Mail], we were looking for a replacement E-mail system," said Phil Rupp, technology service manager at Saander Woodworking Co. in Archbold, Ohio.

The company, which has several hundred Notes licenses, "felt that Notes' document-centric design was not best for E-mail," Rupp said.

ADDING ON AN OPTION

Because of that decision, the company will deploy about 700 seats of Microsoft Exchange. "If we wanted groupware down the road, we felt we could add it to Exchange through third-party products," Rupp said.

Workflow add-ons for Exchange include Billerica, Mass.-based Eastman Software, Inc.'s Workflow for Microsoft Exchange and Nashua, N.H.-based Key-File Corp.'s Keyflow for Exchange.

As Arnum put it: "Exchange is messaging now and groupware later." Notes, on the other hand, is "buy [messaging and groupware] now, and learn at your own pace," he said.

At Unilever North America Foods in

Englewood Cliffs, N.J., E-mail has become more mission-critical than groupware, said Jeff Schnable, director of infrastructure technology.

"We have some very key groupware

applications, but we live and die by E-mail," Schnable said.

At one time, the food giant had 30,000 Notes licenses that were used for E-mail and groupware.

But the company will stop using Notes for E-mail and move to Microsoft Out-

look clients running against servers from Control Data Corp. in Arden Hills, Minn. A fraction of the 30,000 users — perhaps a few thousand — will keep Notes for groupware, he said.

Despite its momentum, Exchange still has a long way to go to overcome Notes' stronghold in the messaging space.

"Exchange won't even come close [to Notes] until [the third quarter of] 1999," Arnum said. □

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Relabeling volumes is an administrative nightmare. It may be difficult to identify the backup of relabeled BCV Volume B as a backup of Volume A. While Volume B is online, having a VVDS with a name that does not match the volume serial may cause problems with SMS and VSAM, and reporting and capacity analysis tools will report that data sets on the BCV volumes are uncataloged.

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Example of how to perform a non-disruptive full-volume backup:

```
1/1998  EXEC PGM=FDR,REGION=0M
//DISK1  DD DSN=FDR,DISK=UNIT01,DISP=SHR,UNIT=3590,VOL=SER=MVS001,DISP=DLB
//          ← Tells FDR to backup offline BCV
          rather than the primary volume.
```

DISP TYPE=FRN

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Devices add 'net storage, won't burden servers

By Nancy Dallon

A WAVE of network-attached storage devices is hitting the market, offering new ways to add network storage without disturbing network hosts or already-bloated application servers.

Plasmon, Inc. in Eden Prairie, Minn., is expected to announce this week the NetReady D-Series CD-Recordable library, which combines a 96-byte network-attached hard disk with a 120-slot CD jukebox. Micro Design International in Winter Park, Fla., last week debuted a

similar product, called UltraServe. The products cost up to \$6,995. Both can deliver CD data at hard-disk speeds.

On the hard-disk-only side, two products debuted at Networkworld/Interop '98 last week. NStar Corp. in Lake Mary, Fla., debuted a network storage module

option for its CR8E and CR8J disk subsystems. And Network Storage Solutions, Inc. in Herndon, Va., unveiled the SpanStar family of devices for storing Unix and Windows NT files.

The entry-level SpanStar SE offers 180G bytes of RAID storage along with a Pentium II processor for \$14,000. The \$38,000 SpanStar GT offers up to 17T bytes of storage and four Pentium IIIs.

Network-attached storage generally is defined as storage that network connects via a LAN interface such as Ethernet. Network storage devices have at least one processor and support file I/O protocols such as Network File System (Unix), Common Internet File System (Windows) and Hypertext Transfer Protocol.

Worldwide estimated revenue for network-attached storage market

1998	400M
1999	1.1B
2000	2.4B

Source: Storage Research, Santa Barbara, Calif.

Michael Peterson, an analyst at Strategic Research Corp. in Santa Barbara, Calif., said last week's announcements show a market that is starting to take off (see chart). He said the benefits driving growth in the network-attached storage market include improved file-serving speed, decreased I/O burden on network hosts and the ability to add and configure storage without taking down the network.

"I've never seen [network-attached storage] that isn't faster and cheaper to manage than comparable server-attached storage," Peterson said.

Charles Shaw, MIS director at telephone headset manufacturer ACS Wireless, Inc. in Scotts Valley, Calif., bought network-attached storage to free his NT-based Notes servers from non-Notes-related data. His 16G bytes of storage on \$1,705 16G-byte Snap Servers from Meridian Data in Scotts Valley, Calif. "With Snap, I don't have to worry about disk partitioning or extra server licenses," Shaw said. "If we have to take our Notes servers down, other functions such as workstation backup or [computer-aided design] aren't affected."

At the San Diego research and development center of Nokia Mobile Phones Americas, Inc., all Unix project data and NT home directories reside on high-end network storage servers from Network Appliance, Inc. in Santa Clara, Calif.

Information technology manager Bob Schultz said network-attached storage was "designed from the ground up to do one thing and do it well," which is to serve files. □

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MORE FORUMS

Computerworld's links to papers, events and resources related to network-attached storage can be found at www.computerworld.com/nastrg.htm. For "Network Link" network-attached storage.

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FRANKLY SPEAKING

Don't ignore the euro

FRANK HAYES

WHICHEVER cares about the euro, anyway? You probably read the news about a week ago. 11 European countries formally agreed to adopt a single currency called the euro. Starting in January 1999, the euro will be legal tender in Germany, France, Italy, Spain, Belgium, Austria, Portugal, Ireland, the Netherlands, Finland and Luxembourg.

And three years later — January 2002 — the euro will completely replace those countries' national currencies.

No more deutsche marks or francs or lire or escudos; from 2002 on, it's all euros.

But so what? Like most Americans, you probably just skipped the euro story and then turned the page to read about the Kentucky Derby or the NBA playoffs.

After all, it's happening an ocean away, it's not a technology issue, and there's no reason it should have an



How ready are your systems for a merger? You need to be prepared.

fit that makes your year 2000 scramble feel like a vacation.

Look, the "euro zone" will be the U.S.'s second-biggest trading partner, behind Canada. Collectively, it's the second-biggest economy in the world. The euro will make it worthwhile for the first time for many U.S. companies to

do business in a currency besides the dollar.

So between the increasing globalization of business and instant Internet access to 300 million euro-zone customers, the question really isn't if you'll ever need to make sure your systems can handle transactions in euros.

It's more a matter of how soon your CEO will see you he wants that capability — and wants it yesterday.

Of course, if you're blindsided by the euro, it won't be a new experience. We've all been ambushed plenty often before — by outsourcing and business re-engineering, by mergers and by sudden business direction changes at our companies.

None of those things are primarily technology issues. When business pundits first began talking about outsourcing, we thought they meant manufacturing or janitorial work — how could you outsource something as crucial as IT? And somehow, we always underestimate the havoc that mergers will wreak on our systems when we discuss we have to radically change the way we do business — almost overnight.

We've got to stop paging past the news we don't think affects us — and start planning for it.

How ready are your systems for a merger? For a dramatic change in your company's line of business? For a sudden change in the way you do business — whether that means using euros or outsourcing production or selling on the Internet? You need to be prepared for those possibilities.

That doesn't mean you should retrofit systems now in anticipation of a merger or euro-business that may never happen. But it does mean designing and building new systems with an eye toward adding capabilities such as euro transactions when they become necessary.

And it means developing contingency plans for mergers and other business changes. The better you understand how you'll need to react to a sudden change, the faster you'll be able to respond — and report to your top management on what needs to be done.

Most of all, though, it means continually watching for all the changes that could affect your company. Technical changes. Business changes. Political changes. Even if they happen an ocean away.

Because if you don't spot them coming, they'll blindside you. And then all your planning won't be worth a plugged euro. **□**

Hayes is Computerworld's staff columnist. His Internet address is frank_hayes@cw.com.

SHORTS

GTE seeks to block MCI deal

GTE Corp. filed a federal lawsuit to block WorldCom, Inc. in Jackson, Miss., from its \$7 billion purchase of MCI Communications Corp. in Washington. Stamford, Conn.-based GTE, a sister of MCI at one point, argued that the deal would hurt competition in the long-distance field and would give MCI/WorldCom unfair dominance over the Internet backbone. An MCI official said GTE is trying to prevent MCI/WorldCom from entering GTE's local market.

IRS cites systems woes

Internal Revenue Service reform should be postponed until after revenue 2000, IRS Commissioner Charles O. Rossotti said, because computer systems updates to accommodate last year's tax law changes and the year 2000 date change already put the systems "at risk." Rossotti was lobbying against IRS restructuring required in a bill the Senate passed unanimously last week. The House is considering a similar bill.

Suit over framing Web content

Fort Wayne Newspapers, an affiliate of Knight-Ridder, Inc., is suing an Indiana World Wide Web site for allegedly placing its own frame and advertising around the newspaper's copyrighted content. The lawsuit was filed against Web developer and Internet service provider Tek Interactive Group, Inc., site host provider Midwest Internet Exchange, Inc., and IDR Corp., the Web site owner. IDR said the site has never accepted paid advertising.

PCs with ADSL modems

Dell Computer Corp., Cisco Systems, Inc. and US West Communications last week announced an initiative to give users build-to-order PCs equipped with Asymmetric Digital Subscriber Line (ADSL) modems. ADSL modems work over telephone lines but provide Internet access up to 128 times faster than 56K bps/acs. modems. Dell plans to offer the modems on select Dell Dimension XPS PCs this year. US West this month will deploy ADSL service in more than 20 cities.

Netscape prevails in lawsuit

Netscape Communications Corp. said it won a patent battle with Wang Global, which sued Netscape and America Online, Inc. over Internet software. A federal judge dismissed Wang's claim that its patent on its VideoNet system covered certain ways browsers store and retrieve electronic pages from a central server. The judge ruled the patent was "fundamentally different" from Internet technologies.

Which Internic?

An Australian consumer protection agency recently accused Internic Technology Pte. Ltd. of duping people into believing they were dealing with Internic, the U.S.-based registrar of Internet domain names. The agency asked a court there to bar the firm from using the Internic name and to give partial refunds. Internic's World Wide Web site has now disclaimers that it isn't the U.S. registrar Internic, which is run by Network Solutions, Inc. in Herndon, Va.

IBM's E-commerce strategy

Building on its electronic-commerce push, IBM last week announced a series of software tools aimed at helping users securely build, deploy and manage Java-based World Wide Web applications. At the Technical Interchange conference for application developers, IBM said it will roll out the products during the next year as part of a new product line called IBM WebSphere. The first product will let corporate application developers pull data out of legacy systems to use on intranets or electronic-commerce sites.

Microsoft adds 3-D to NT

Microsoft Corp. plans to redefine the way people view information on the World Wide Web and on their PCs by integrating three-dimensional capabilities into the Windows NT interface. The first step is a 3-D rendering tool called Chrome, which is being added to Windows 98 this year and Windows NT next year. Later additions to the operating system will make the interface more three-dimensional, letting users arrange and view information from many angles, a Microsoft spokesman said.

SHORT TAKES A California legislative committee defeated a bill that would have protected software vendors, banks, and other companies from year 2000-related lawsuits. ... Peoplesoft, Inc. in Pleasanton, Calif., this week will announce an equity investment in a San Francisco-based SPL WorldGroup BV and a plan to its SPL's customer information software for utilities to its own packaged applications.

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Year 2000 bill guards pensions

By Matt Hamblen

THE HEAD of the U.S. Senate's year 2000 committee last week proposed a bill requiring companies to ensure that \$3 billion in pension funds won't be jeopardized by year 2000 computer problems.

The measure, S. 2000, was proposed by U.S. Sen. Robert Bennett (R-Utah). It would require those who run pension funds to determine whether the issuers of the securities they invest in are fixing year 2000 problems.

Also, fund operators must

check whether the market where the security is traded will operate smoothly.

Observers said the securities industry is actually ahead of most industries in year 2000 repairs (see story, page 41). But Bennett's bill is an example of Washington's increasing attention to year 2000 issues.

Last month, the Senate created the Special Committee on the Year 2000 Technology Problem, chaired by Bennett. In February, President Clinton created the President's Council on Year 2000 Conversion.

Bennett's bill also gives the

presidential council, led by John Koskinen, more flexibility to retain year 2000 workers from federal agencies and transfer people and funds where they are needed most.

The U.S. General Accounting Office (GAO) last week reported that 12 departments and agencies have raised concerns about retaining and recruiting year 2000 workers. The GAO declared the lack of a government-wide strategy for addressing this.

But a spokesman for the presidential council said Koskinen "hasn't heard much about a

personnel shortage" after meeting with 40 federal agency and department heads.

Another GAO report released last week criticized U.S. Department of Defense readiness for the year 2000. The report said the department has a "flawed" approach of "correcting non-mission-critical systems nearly as quickly as its mission-critical systems."

Meanwhile, a CIA assessment of year 2000 readiness abroad found all countries are behind the U.S. private and public sectors. A CIA spokesman confirmed that an official in a Middle Eastern country told the CIA not to worry about the millennium bug, saying: "When we see it, we'll spray for it." □

Web privacy

CONTINUED FROM PAGE 2

working to solve the privacy issue. For example, Truste requires members to post privacy policies and then conducts audits to check if the policies are followed, although so far only a few dozen sites have signed on. Many members are hoping their work will convince the government that new laws aren't needed.

"A lot will depend on the success of organizations like Truste," said Craig Donato, vice president of database marketing at Exact, Inc. in Redwood City, Calif., which is a Truste site. Supporters said it doesn't matter whether one group or several emerge to champion privacy on the Internet, as long as major Web sites come on board.

But public opinion seems to favor government action. According to a BusinessWeek/Tarris poll in February, 53% of Americans surveyed want new laws on how personal information can be collected and used on the Internet.

And a survey of 10,000 Web users last fall concluded, "Privacy now overshadows censorship as the No. 1 most important issue facing the Internet," said the Graphic, Visualization & Usability Center at the Georgia Institute of Technology.

"Sleepiness about self-regulation for privacy protection is understandable," said Marc Rotenberg, director of the Electronic Privacy Information Center in Washington. "The commercial incentive to collect and sell data is enormous. The safeguards are weak and easily ignored."

Americans may be accustomed to their credit and buying habits being tracked, data-mined and resold, but the Internet pushes that practice into new territory by letting Web sites track what people look at online, not just what they buy.

The results surprised him. "They were used to calling and speaking to Ruth down the street. At first, we had a lot of hang-ups because people thought they had the wrong number. But now customer response has been positive. They're saying they could get through on the first try without getting a busy signal," Goodman said.

Ed Silva at Technology Solutions Corp., the Dallas-based consulting company that set up the new call center, said service representatives get a single-view desktop for billing and service records for the 5,000 calls they take in daily. □

Tech revamp recharges utility

CONTINUED FROM COVER 1

technology changes with boosting recent earnings.

On April 28, the company reported quarterly profits of \$17 million — up by 22% compared with the same quarter last year — on \$288.5 million in revenue.

"The success of our company is [based on] the fact that our new system cuts costs and makes us more efficient," said Best, CEO of the \$900 million natural gas utility. "It's a tremendous step forward for us. We turned several different systems into one. That's a vast im-

provement. I'll guarantee you that."

Dallas-based Atmos, founded in 1965 in the Texas panhandle as the Amarillo Gas Co., overhauled its information technology in sites spread across 12 states from Colorado to Virginia. The 15 teams built a new customer information system and consolidated 130 service offices into a central call center in Amarillo, Texas. In the process, the company converted a just-in-time of maintenance and terminals into one client/server system linked to the call center and

service workers in the field (see related story below).

Industry analysts said the new systems improve the utility's standing in a market in which competition is rising.

"This new system is working for them already. They've cut operation expenses by 24%, and that's boosted their earnings," said Doug Christopher, an analyst at Cowell, Weedon & Co., a Los Angeles-based brokerage.

Technology drives business changes

Executives at Atmos decided in November 1996 that they had to make some business changes with the technology they used.

"So Charles Goodman, who heads up the IT team at the Dallas-based utility, was charged with throwing out much of the company's old system and bringing in a new generation of technology," Goodman changed much of Atmos' core systems, including the following:

- Replacing the infrastructure, from test-based, green-screen terminals to a client/server system based on Windows NT and Windows 95. Price: \$12 million.
- Replacing three legacy systems with one new customer information system that put a customer's records at a service representative's fingertips and eliminated the need to hunt for information while keeping customers waiting. Price: \$18 million.
- Giving service workers on the road handheld meter readers and mobile data terminals, which eliminated their paperwork. Price: \$4 million.
- Consolidating 130 service locations into one call center. Price: \$7 million.

Goodman said the company also considered installing an automated meter reading system to do away with the need for meter readers to drive from home to home. But the move wasn't cost-justified and was put on a back burner.

The new system extends to the company's sites in each state it serves: Texas, Colorado, Kansas, Missouri, Iowa, Illinois, Kentucky, South Carolina, Virginia, Tennessee, Georgia and Louisiana.

—Sharon Gaudin

Daniel Fidell, a gas utility analyst at A.G. Edwards and Sons, Inc. in St. Louis, said, "Atmos has done a good job of using modern technology to achieve greater cost savings and help them absorb other companies. Atmos has a good strategy here."

The initiative for the IT investments came from Atmos' business leaders. The executives approached 15 managers late in 1996 and told them they had to change the way the company did business. To do that, they had to modernize and simplify their technology.

"There was no way we could be competitive with the technologies we had in place," said Charles Goodman, executive vice president of utility operations and IT chief at the company.

Goodman said the company will also absorb acquisitions more quickly — part of its growth strategy. It took Atmos five years to integrate Greely Gas, a Colorado utility acquired in 1993 that boosted Atmos' size by a 25%.

With the new system in

place, Atmos expects to take less than six months to integrate Tennessee-based United Cities, a company that is twice as big as Greely.

And Best said he expects that the new systems, which led to a 400-worker reduction, will move the company up to \$100 million in the next 10 years.

And there is built-in room for growth: Atmos estimates the system can handle its plans to double its customer base in a million within five years, with plenty of capacity.

Goodman said he was worried that a modern call center would alienate rural and small-town customers of Atmos.

The results surprised him. "They were used to calling and speaking to Ruth down the street. At first, we had a lot of hang-ups because people thought they had the wrong number. But now customer response has been positive. They're saying they could get through on the first try without getting a busy signal," Goodman said.

Ed Silva at Technology Solutions Corp., the Dallas-based consulting company that set up the new call center, said service representatives get a single-view desktop for billing and service records for the 5,000 calls they take in daily. □

In the newly deregulated utility industry, the future belongs to the IT winner in Depth, page 70

MOREONLINE
Computerworld's Index related to privacy and electronic commerce can be found at www.computerworld.com/journs/online under Research Links. "Privacy and electronic commerce."

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A bumpy IT ride for DaimlerChrysler? Users hold high hopes for NT/Unix integration

CONTINUED FROM PAGE 1

years of investment.

"From the technology standpoint, the merger will take a long time," said Stefan Wiesner, chief technology officer at Gedes North America, a Volkswagen AG subsidiary. "Connecting the finance systems would be a pretty easy task. But the technical information systems alone would take five to 10 years," Gedes North America is Volkswagen's outsourcing in the U.S. and Mexico.

"Even just agreeing on a corporate-wide CAD system could take years. From our experience with VW and other clients, if you change systems, it takes five to 10 years," Wiesner added. It will take DaimlerChrysler years to decide upon — and then design — a new standard system for joining separate engineering and manufacturing systems, said Roy Vasher, the general manager of information systems at Toyota Motor Manufacturing North America, Inc. in Erlanger, Ky.

Unifying systems and applications may pose some hurdles, but Daimler-Benz insider Rick Wargo said Chrysler's management shouldn't be too concerned about cultural barriers when it comes to collaboration.

Wargo said their new German brethren won't change their entire way of life.

"The business problems are the same," said Wargo, president and CEO of Dehis in Information Technology Services, Inc., a Daimler-Benz IT consulting arm in Rosemont, Ill.

Wargo said there are few significant cultural differences between IT professionals in the U.S. and Germany because U.S. hardware and software suppliers have led the software industry.

CONSOLIDATION TREND

The DaimlerChrysler deal was not the only merger announced last week in an industry that analysts say is going through consolidation.

Volkswagen AG bought British luxury car maker Rolls-Royce Motor Cars for \$500 million Thursday.

Richard A. Hendersen, an analyst at the Pensions division of Donaldson, Lufkin & Jenrette, Inc. in Jersey City, N.J., said the Daimler-Benz/Chrysler

merger "puts both companies in a better position."

A merged DaimlerChrysler can better sell cars in fast-growing markets such as Asia-Pacific and Latin America, while cutting costs by flexing bigger bargaining muscles with suppliers.

"The biggest bang for the buck will be learning on suppliers," Henderson said, "and that savings ties in to computers" because all automakers rely on component suppliers for CAD/CAM systems and largely depend on electronic data interchange.

Chrysler's IS managers may want to take some advice from Vasher. The Toyota IS manager used to work at Ford Motor Co.

"Dealing with a different culture, you really have to be patient and a good listener," Vasher said. "You need to really understand and grasp the reasons why someone is doing something. It may be for issues you haven't thought of because you haven't been on the other side of the water and seen what they have."

Vasher said Toyota's culture is

to make decisions based on long-term strategy, not necessarily immediate payback.

"I worked at Ford for 20 years, where it was always 'Why are we doing this?' and 'What is the return?' Toyota has no sense of what will be the budget impact of a decision or the effect on this year's bottom line," he said.

CULTURE CLASH

"We're talking about two very different cultures here, with the Germans being very command-and-control oriented, while Chrysler has built its success by empowering people at levels and driving down decisions as low in the company as possible," said Ralph Coletto, vice president of the global automotive practice at A.T. Kearney, Inc. in Chicago.

Competing cultures can be bad news; they can cost companies some of their most talented and valued business IT executives, Coletto warned.

"Aggressive executives are going to wonder how they'll get to the top levels now, so there's a chance they'll leave," he said. □

Executive editor Margolin Johnson and senior editor Tom Hoffman contributed to this story.

By Sharon Gaudin
LAS VEGAS

CORPORATE USERS are hoping that Microsoft Corp.'s latest promises of easier connectivity between Windows NT and Unix will come to life.

Jim Allichon, senior vice president of the personal and business systems group at Microsoft, told a group of users at Network/Interop '98 here that the Redmond, Wash.-based company is working on a Win32 NT Services for Unix add-on pack.

The software, which is slated to go into beta this summer for Intel and Alpha platforms, was designed to make it easier to integrate Windows NT 4.0 Workstation and Windows NT Server in a Unix environment.

"I've had problems learning Unix because it's hard to remember all the different, specific commands," said Brian McGuire, director of interactive technologies at Econometrics, Inc., a database marketing firm in Chicago. "Going through NT would be easier. Maintenance would be easier."

A Microsoft spokesman said

the add-on will include resource sharing, remote administration, password synchronization and command scripting across Unix and NT platforms.

Microsoft has made a good start, said Dan Kusnetzky, an analyst at International Data Corp. in Framingham, Mass. "NT is a junior system in corporate environments," he said. "The better NT works with the senior system — [typically] Unix, OS/400, OS/390 and OpenVMS — the more likely it is to be brought in and used more."

Kusnetzky also said other large vendors have software that links their Unix systems to NT. But their products don't extend beyond their individual Unix systems. Microsoft's add-on pack won't be confined to specific Unix systems.

Bob Daniels, a senior power systems engineer at Pacific Gas & Electric Co. in San Francisco, said the utility is using software from a third-party vendor to hook its Unix system to NT. "Connecting there is pretty tough," he said. "But it's critical. Maybe this will make it easier. We'll have to wait and see." □



HP takes another shot at clarifying Web plans

CONTINUED FROM PAGE 1

companies to group applications or users into different categories with varying levels of access and service availability. Corporations use the technology to prioritize access to Web service.

Also expected are a number of Web security tools, payment technology and cross-platform management software. Also attending will be partners like Corp., Cisco Systems, Inc., Open Market, Inc. and HP subsidiary VeriFone, Inc., said a source at the company.

THIRD TIME CHARM?

This is the third major rollout of products and services HP has announced in the electronic-commerce space in the past year. So far, HP has failed to put itself on most customers' interest radars, said John Montgomery, chief information officer at Embarcadero Systems Corp., a provider of marine transportation logistics services

in Alameda, Calif.

"HP [officials] may be talking about their [Internet] strategy



Advanced Fiber's David Krauthamer: HP hasn't very forthcoming with Internet plans

right up there in their noisy towers . . . but it looks like they have failed to tell their sales force about it," Montgomery said.

For instance, although Embarcadero uses HP hardware and services extensively, "not one of the four sales reps I deal with even once mentioned an

Internet strategy," he said.

A similar lack of information about HP's electronic-commerce products and plans means the company most likely won't be involved in an electronic-commerce project at Advanced Fiber Communications, a Petaluma, Calif.-based manufacturer of telecommunications equipment.

"I haven't had much of a head-up on HP's Internet plans," said David Krauthamer, director of information technology at Advanced Fiber. "When they come to me, they are just pinching their hardware."

The problem may have a lot to do with HP's business model, which has flourished mainly by allowing individual business groups to function as highly autonomous units, analysts and users said.

The result is that it is sometimes difficult to get a single cross-company view of where HP is headed in the electronic-

commerce space, they added.

HP officials acknowledged the problem and claimed that putting a single face on the company is one of its biggest priorities.

POOR COMMUNICATION

For its Internet strategy in particular, HP has not done a very good job of communicating its strategies or differentiating itself from other vendors, said Nigel Ball, general manager of HP's Electronic Business Software unit.

But "we are doing a lot to strategically link the various organizations to create a more integrated company" to address such issues, said Joe Beyers, general manager of HP's recently formed Internet software business unit.

Efforts include a company-wide internal communications effort, training and educational seminars for customers and channel partners, Ball said. □



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Retrofitting resource planning to mainframe

IBM tries to ease database integration issues

By Ankur Patel
and Craig Stedman

THE APPEAL is strong. Mainframes provide the scalability, reliability and performance that a growing number of large-scale enterprise resource planning (ERP) systems require but that traditional ERP hardware sometimes can't deliver.

Since SAP AG slipped its software on DB2 last year, IBM claims to have sold more than 125 R/S mainframe licenses. And the company has sold nearly 250 PeopleSoft Inc. mainframe licenses.

But implementing ERP on mainframes isn't easy. That is the word from users who in-

stalled packages from ERP vendors such as SAP and PeopleSoft on an AS/400 mainframe using the DB2 database environment.

THE MURKIES

Because ERP packages are usually written to run on Oracle, Unix or Windows NT environments, running them on DB2 requires careful performance tuning and customization of the underlying database, said Michael Myers, a database analyst at Houston-based Coastal Corp. an energy conglomerate.

For instance, DB2 organizes data differently from the databases used in typical ERP setups. Whereas data-

bases such as Oracle work well with large table spaces, DB2 works best with tables that are spread across multiple small table spaces. ERP software tends to use large table spaces.

Similarly, ERP packages for mainframes don't always take advantage of DB2's performance features. For example, ERP software tends to use dynamic SQL searches to validate user queries.

That kind of a search is slower than DB2 static SQL option, where such validation data can be preloaded.

"It's like two different worlds coming together. All the shops that are trying to [implement ERP on DB2] are blazing a new trail," Myers said.

Some of those issues are simi-

lar to what users face when implementing ERP on any platform, argued Mark Shafrook, manager of information systems and technology at Fort

"All the shops that are trying to [implement ERP on DB2] are blazing a new trail."

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Smith, Ark.-based Balfour Beatty Co., the first SAP R/S installation to go live on an AS/400 in North America.

He conceded that there is no doubt that the DB2 layout is extremely different from that of Oracle, and there are a lot of differences that need to be resolved to get SAP to work on DB2. But none of those was se-

nious enough to slow him down, he said.

The vendors said they recognize that work needs to be done to make implementing ERP on mainframes easier.

IBM has dedicated more than one-third of its DB2 staff to handle ERP integration issues, said Jeff Jones, an IBM program manager in San Jose, Calif. IBM has teams working with each major ERP vendor.

Ralph Tietz, an SAP vice president in charge of its relationship with IBM, said DB2 requires different skills from the other databases supported by R/S. But that is related more to the database itself than to anything inside R/S, he said.

That is why SAP is building a team of employees with System/390 know-how to help train users, outside consultants and IBM-compatible mainframe makers on the ins and outs of R/S, Tietz said.

Upgrade gives OneWorld flexibility

J. D. Edwards moves beyond AS/400 base

By Craig Stedman

J. D. Edwards Co. wants to play with the big boys in the packaged applications market. But it has some business to take care of first.

The Denver-based company this year plans to flesh out its one-year OneWorld application suite with all the functionality in its older AS/400 software — and then some.

The first step took place last week with the announcement of a OneWorld upgrade that adds expanded supply chain management capabilities.

J. D. Edwards already is among the top five enterprise resource planning software makers and was the first to develop a component-based architecture (see chart).

But for now, the company's sales are still heavily weighted toward its traditional AS/400 applications.

Only about two dozen users have gone live with the newer OneWorld technology.

And analysts saw two-thirds of the more than 400 OneWorld licensees sold in J. D. Edwards have gone to AS/400 shops rather than Linux or Windows NT users.

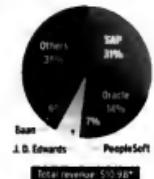
John Burroughs president of Cascade Designs, Inc., said OneWorld's lack of a proven track record outside the AS/400 market was a concern when his

company joined J. D. Edwards against rival The Baan Co. in an AS/400-based installation that began last week.

But J. D. Edwards managed to convince us that they are pretty serious about what they're doing with OneWorld," Burroughs said.

PARTY OF FIVE

Markets 1997 market share for enterprise applications on all platforms, by revenue:



Source: Amadeus/Burroughs Inc., Baan

The component-based technology is "really slick, and it was there," he added. "With Baan, it was always that they're going to have that, but can't show it to us now."

The component approach should simplify upgrades and let Cascade, a maker of camping and hiking products, tailor

OneWorld to specific users, Burroughs said.

J. D. Edwards has enough help to go toe-to-toe with the likes of SAP AG, especially at midsize manufacturers, said Jim Holmcheck an analyst at Giga Information Group in Cambridge, Mass.

A COME FROM BEHIND

But the company is playing catch-up on functionality that OneWorld still lacks, such as human resources and some manufacturing capabilities, Holmcheck said. J. D. Edwards also needs to do better marketing, he said.

The OneWorld upgrade announced last week adds supply chain features such as order, warehouse and transportation management. J. D. Edwards officials said. Another release due by year's end, will support human resources, quality management, repetitive manufacturing and customer service management.

OSE Inc., a Toronto-based maker of shelving and other fixtures for retail stores, was one of the earliest OneWorld users. J. D. Edwards' component lead was a big point in its favor over SAP, said Delvin Fletcher, vice president of information systems at OSE.

OneWorld's design should let OSE "change and evolve it without having to go back and do much reimplementation work," Fletcher said. D

Enterprise suites bloom

By Craig Stedman

IT'S SPRING, and new versions of packaged applications are in full bloom.

Oracle Corp. this month began shipping Release 11 of its applications suite, which initially will be available only to a thin-client mode based on the company's network computing architecture.

SAP AG next month is scheduled to start general shipments of R/S 4.0, a new version of its market-leading software that has been in limited release since December.

The Baan Co. also is due to roll out pieces of its modular BaanSeries product next month (CW, April 27).

And PeopleSoft, Inc. has penciled in a second-quarter launch for Release 7.5 of its applications. That means the top application vendors, including J. D. Edwards & Co. (see story at left), are battling five for five on new releases this spring.

For SAP, R/S 4.0 is the first step toward a promised component-based architecture that will let users manage the German company's applications piece by piece. R/S' human resources module and parts of

its financials package are the first to get the component treatment, SAP said.

New data warehousing, sales force automation and supply-chain management products scheduled for release later this year as R/S 4.0 add-ons also are being developed in component form.

The new architecture should make R/S upgrades "more compartmentalized," said Pat McGinty, director of information technology services, Inc.'s storage products group in Itasca, Calif.

Ti Allo is the first company to go live with R/S 4.0 after the software began limited shipments. McGinty said Ti Allo is also eyeing R/S' promised data warehousing technology.

The warehousing module and the other two add-on applications "are going to change the equation for R/S," said Joshua Greenbaum, an analyst at Hurwitz Group, Inc. in Framingham, Mass. "It's no longer just back-office software."

A shoe company plans to go live with an industry-specific SAP/R3 add-on. Page 57

Retrofitting resource planning to mainframe

► IBM tries to ease database integration issues

By Jayakumar Vajaran
and Craig Stedman

THE APPEAL is strong: Mainframes provide the scalability, reliability and performance that a growing number of large-scale enterprise resource planning (ERP) systems require but that traditional ERP hardware sometimes can't deliver.

Since SAP AG shipped its software on DB2 less than a year ago, IBM claims to have sold more than 100 R/3 mainframe licenses. And the company has sold nearly 200 PeopleSoft, Inc. mainframe licenses.

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THE HURDLES

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bases such as Oracle work well with large table spaces, DB2 works best with tables that are spread across multiple small table spaces. DB2 software tends to use large table spaces.

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* Includes license and service revenue
Source: Amherst Manufacturing Research, Inc., Boston

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& A shoe company plans to go live with an industry-specific SAP R/3 add-on. Page 87

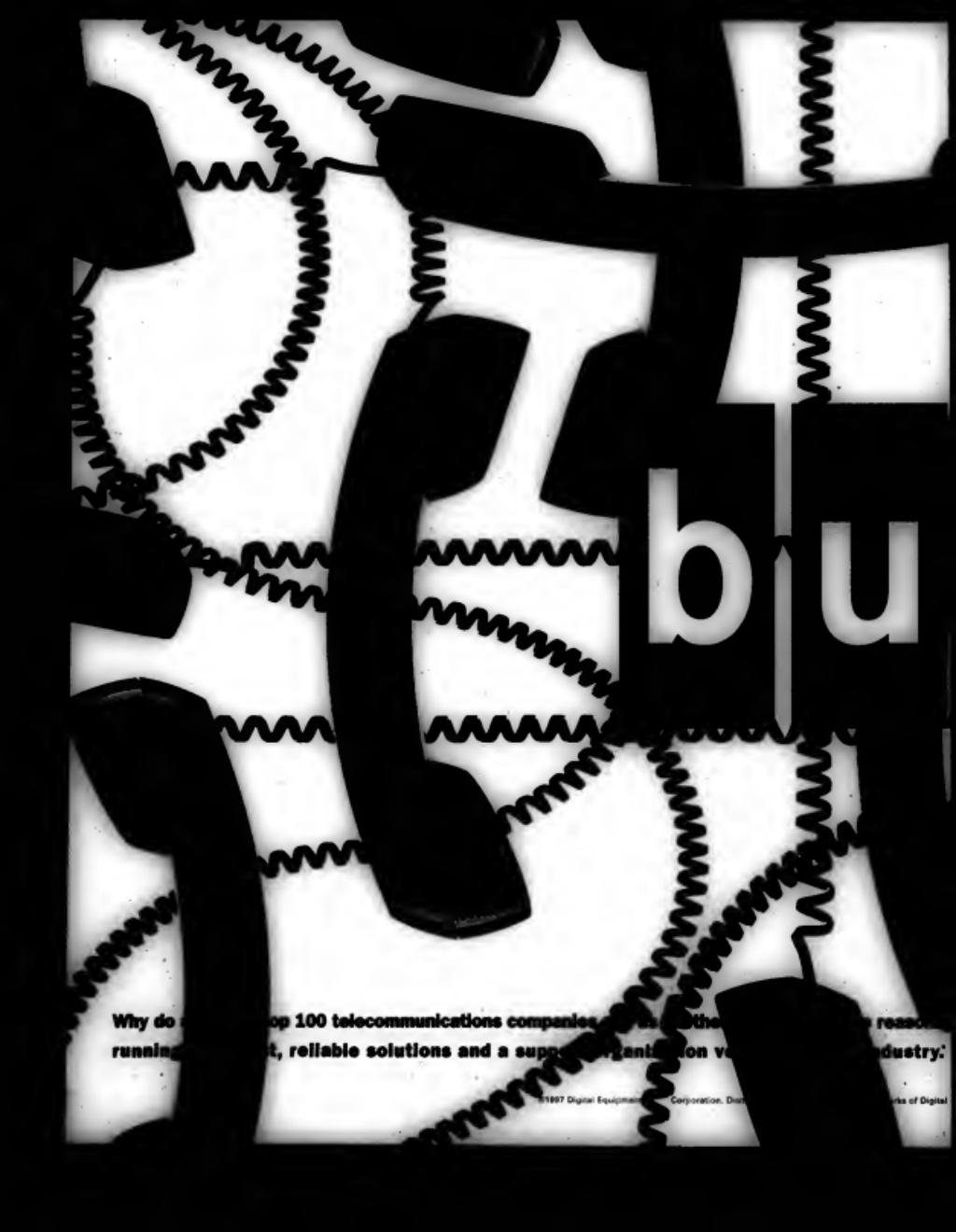
Trying to Manage a Costly, Confusing IT Oracle

10 IT Service Metrics

By Alan Brundage



10



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JAILHOUSE IT

► Prison labor is cheap but hard to manage

By Kim S. Nash
DRAPER, UTAH

HUGO WEIGAND'S fingers fly across the keyboard at 10,000 strokes per hour. He almost never misses a day at his data-entry job. He is a model employee, recently promoted to document batcher.

Weigand is also a convicted murderer. He is serving 45 years to life in the Wasatch County prison complex here. He is one of hundreds of convicts in the U.S. who do data entry or telemarketing or who make travel reservations or even digital maps for companies and government agencies.

Low wages and high-quality work make prison labor an attractive, if controversial, outsourcing option for some companies, including Procter & Gamble Co. and Trans World Airlines (see chart).

But unusual management problems come in the bargain.

Aside from obvious security concerns, companies must adjust to the peculiarities of a behind-bars workforce, from prison lockdowns to workers who leave because they get paroled.

FAST-GROWING WORK

No one has reliable statistics, but prison officials in several states said computer work is growing faster than traditional prison jobs, such as sewing and making license plates. The federal corrections system and at least 36 states have prison industry programs, and most prisons entail some kind of computer or telemarketing work.

You can't beat the prices. For example, the 83 cents to a few dollars per hour that inmates are paid for data entry is nothing compared with the \$8 to \$14 per hour that workers in the free world get for the same job.

But the low wages also bring criticism. Labor unions claim that prison labor steals jobs from law-abiding workers, and civil liberties groups say the programs are exploitative.

Other observers said using prisoners to handle often sensitive data without consumers' knowledge is unethical, and the practice may backfire.

A typical example of today's prison labor is Wasatch prison, just south of Salt Lake City.

There, 40 male and 40 female prisoners key in data for the Utah Bureau of Medicaid. Every day at 6 a.m., a state-owned van brings crates of medical claim forms to a loading dock just in-

cent an hour raking rocks. That gets tough in the dead of summer," said John Spearman, assistant director of the Arizona Department of Corrections in Phoenix.

Businessman Dan Bohan is slowly learning how the system



Eighty inmates at a Utah prison do data-entry work — after the cartons of paper have been searched for contraband

side a metal fence that is reinforced with four layers of razor wire. The cargo is combed for contraband by armed guards.

Work stopped for more than an hour last month as officials searched inmates for illegal tobacco, said Richard Clasby, director of Utah Correctional Industries, which oversees the prison's 25 businesses.

"I won't lie to you and say it's easy doing business here. There's a lot to overcome," Clasby said.

Across the country, inmate work programs are interrupted every few hours to allow for prisoner head counts, for example. Corporate managers often can't directly supervise their prison workers — they have to go through wardens and guards — unless they get trained as corrections officers. That means learning things such as how to handle a cattle Prod.

And workers can be paroled anytime or, like one Kentucky convict, yanked off the job for fighting over a plastic spoon.

But there are benefits to inmate labor, advocates said, including high productivity from prisoners who are motivated to get and keep those special jobs.

"The alternative is to make so

peat customers. There are no printers on the network, nor are workers allowed pens or paper.

To further guard against security problems, prisoners aren't allowed to take credit-card numbers or personal information, said Bohan, who co-owns Travel Wholesalers International in Fairfax, Va.

When a transaction reaches that stage, callers are transferred to a regular Travel Wholesalers employee.

Bohan maintained that he wants to give convicts job skills so they can avoid a life of crime after leaving jail. It doesn't hurt, he said, that once the kinks are worked out, he expects to save roughly 50% or more in wages compared with what traditional reservation agents are paid. He said he hopes to have 50 inmates working for him by early next year.

But after 14 weeks of paid training for the first batch of 12 female prisoners, three soon left — paroled. Good for Bohan, presumably, but bad for Bohan. "It's not the smoothest start in the world," he said.

Prison officials won't guarantee any minimum employment commitments for the convicts, but Bohan may have solved that problem. "The five new people we're hiring are all lifers," he said.

In all convict work programs, prisoners are monitored closely by armed corrections officers. Advocates claimed that makes the prison labor pool more secure than most. But trouble does happen.

Metromail Corp., a database marketing company in Lombard, Ill., is being sued by an Ohio woman over an incident with an inmate. A prisoner who processed consumer surveys for

Metromail wrote the woman a serial letter that included personal details from her survey. Metromail has since stopped using prison labor.

OVERBLOWN FEARS

To the degree of data abuse in prison programs is exaggerated, advocates said.

Chent companies may know more about individual prison workers than they do about most corporate employees, they said, adding to the denoted files and close eye kept on inmates.

And unlike in the free world, inmate workers who break rules can be punished immediately, and not only by being fired. They also can be denied recreation privileges or put in solitary confinement, said Morgan Reynolds, an economist at the National Center for Policy Analysis, a conservative think tank in Dallas.

"In a way," Reynolds said, "these problems are easier to handle in prison."

Most companies don't tell their customers that convicts may handle their data.

That's a mistake, said Megan Barry, a member of the Ethics Officers Association, a group for corporate ethicists run by Bentley College in Waltham, Mass.

Consumers have a right to know exactly whom they give information to, Barry said. "The impression [companies give] is that you're not giving it to someone who is a rapist or murderer."

Prison labor may keep costs down, which is a benefit to customers. But "a knowledgeable consumer may choose to pay more for a service they know they can trust," she said. □

INMATES AT WORK			
Prison	Type of work	Pay	Sample customers
Eastern Kentucky Correctional Complex, Ft. Mohr, Ky.	Coupon processing	25 to 75 cents per hour	Procter & Gamble
New Mexico Women's Correctional Facility, Grants, N.M.	Microfiche conversion of paper records	20 to 80 cents per hour	Local hospitals, State Highway Patrol
Santa Rita Institute, Perryville, Ariz.	Call center	40 to 80 cents per hour	Arizona Motor Vehicle Department
California Youth Authority, Napa, Calif.	Telephone reservations	Up to \$6 per hour	Trans World Airlines
Federal Correctional Institution, Marion, Ill.	Scanning, mapping	23 cents to \$1.15 per hour	U.S. Patent and Trademark Office, Department of Defense
Washington State Reformatory, Monroe, Wash.	Database design, telemarketing	Up to 55 per hour	Washington Marketing Group

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Informix shoots for Win NT users via channels

By Craig Stedman
New York

WITH WINDOWS NT USERS largely ignoring its databases, Informix Corp. next month plans to take another stab at cracking the NT market.

But don't expect to see new products.

Informix is trying to cozy up to NT users through resellers and software vendors, and CEO Bob Finocchio last week said the company's top priority is a beefed-up incentive program aimed at luring more of those firms to support its databases.

The new Windows NT recruiting effort is due to be announced in early June

at a meeting with indirect channel companies in San Francisco. Informix made a similar NT pitch at its user group conference last summer, but Finocchio said that didn't do much to improve NT sales, which are still less than 10% of the company's product revenue.

"The flag was waved, but the sub-

stance wasn't there," said Finocchio, who was hired to run the then-reeling Informix the same week the earlier announcement was made. "There were some good PowerPoint slides, but I don't think the company really had plans in place to execute."

Although it was slower than other database vendors to embrace Windows NT, Informix doesn't lack for NT products now. But it has just a single-digit share of the NT database market and lost a lot of ground last year, said Carl Olofson, an analyst at International Data Corp. in Framingham, Mass.

Total NT database sales nearly doubled to \$4.3 billion last year, but Informix's business stagnated at about \$50 million, Olofson said. Getting more backing from resellers is critical to changing that because indirect channels play a huge role in the NT market, he added.

But with Microsoft Corp. just months away from shipping a faster and more scalable version of its SQL Server database, Informix is running out of time to become a serious contender in the NT market, Olofson said. "It's kind of too bad they didn't do this last year."

Informix's slow draw on Windows NT has pushed even some loyal customers to turn to rival databases for new NT-based applications. For example, Choice Hotels International, Inc. runs its reservation system, data warehouse and other applications on Informix databases. But the Silver Spring, Md., franchiser bought Microsoft SQL Server for an NT-based property management system that is being rolled out to its U.S. hotels.

"We'd like to have the same database out there in the field, but Informix was a little late getting to the plate with NT," said Gary Thomson, vice president of information systems at Choice's data center in Phoenix.

Cascade Design, Inc. didn't give Informix much thought when it planned a rollout of packaged NT applications. Microsoft and Oracle Corp. were the only database vendors that got a close look from the Seattle-based maker of camping and hiking gear, which went with SQL Server on NT, said John Burroughs, Cascade's president.

The details of Informix's upcoming announcement are still being finalized, "but there are real dollars being committed now," Finocchio said. He added that NT is one of three markets that is being counted on to help Informix continue its recovery from the financial meltdown it suffered last year.

But Informix doesn't plan to take on Microsoft for low-end database sales. The Menlo Park, Calif., company is focusing on high-performance applications in its three key markets, which also include data warehousing and World Wide Web content management. □

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QUICK STUDY

Net trends & technologies in brief

S/MIME

DEFINITION: Secure Multipurpose Mail Extensions (S/MIME) is an E-mail security protocol. It was designed to prevent the interception and forgery of E-mail by using encryption and digital signatures. S/MIME builds security on top of the MIME protocol and is based on technology originally developed by RSA Data Security, Inc.

Adoption of S/MIME still lagging

By Barb Cole-Gomolka

S/MIME IS THE DE FACTO standard for securing E-mail over the Internet and is widely supported in popular E-mail packages. But few users have implemented the protocol.

Widespread S/MIME deployment won't greatly change the way many large organizations use E-mail because most users are accustomed to sending sensitive messages without encryption despite the risks, says Mark Levitt, an analyst at International Data Corp. in Framingham, Mass.

Others agree. There hasn't been a good business reason to use S/MIME, says Paul Hoffman, chairman of the In-

AT ISSUE
Few users have implemented the protocol

ternet Mail Consortium, an industry group in Santa Cruz, Calif. "S/MIME is a mature protocol, but [electronic commerce is] not a mature market," Hoffman says. He points out that S/MIME's strength is its ability to validate the identities of E-mail senders and recipients through digital signatures.

That capability will be key to electronic-commerce applications, he says.

But few companies have installed a public key infrastructure or have an enterprise directory. Both are essential for tracking E-mail addresses, digital signatures and public keys, which are key elements for implementing S/MIME. (To learn more about public key encryption see QuickStudy,

March 16, page 32. And for more information on directories, see QuickStudy, Jan. 16, page 32.)

S/MIME has taken a while to catch on because it hasn't received approval from the Internet Engineering Task Force (IETF). But it is expected to achieve Request For Comment status within the next six months, sources close to the standards development say. Online services are expected to begin offering S/MIME as part of their E-mail services by year's end, according to analysts.

Still, S/MIME won't go unchallenged as a dominant messaging security protocol. A rival specification, called Open Pretty Good Privacy (PGP) and based on the commercial security software from PGP, Inc., is also on its way to becoming an IETF standard.

Jonathan Penn, an analyst at Forrester Research, Inc. in San Francisco, says IT departments at larger organizations favor S/MIME over Open PGP.

That's because S/MIME has the backing of messaging heavyweights such as Lotus Development Corp. and Microsoft Corp. "Also, PGP is not perceived as a viable solution for business E-mail because of its weaker approach to authentication," Penn says. Still, pockets of users will continue to use PGP. Because S/MIME and PGP don't interoperate, that could create a headache for users. □

DELDING E-MAIL SECURITY STANDARDS

	S/MIME	Open PGP
Origin	Developed by RSA Data Security	Developed by PGP, Inc.
Format	Based on X.509	Based on PGP
Vendors that support it	Microsoft Corp. and Netscape Communications Corp.	Qualcomm, Inc. and IBM
Status	Draft specification	Draft specification

FAQ: What the standard does

Q: What problems does S/MIME solve?

A: S/MIME can prevent E-mail interception and forgery. It uses encryption for the contents of messages and digital certificates to verify the identity of senders and receivers.

Q: Is S/MIME just for E-mail?

A: S/MIME currently is implemented in E-mail packages, but it is expected to be adopted by electronic data interchange and other electronic-commerce software packages. Help desks also are expected to use it so sensitive data such as passwords can be sent over an E-mail network or the Internet.

Q: Do the sender and the recipient need S/MIME to exchange E-mail securely?

A: Both sender and recipient need S/MIME-compliant clients, but they don't need to use the same software package. For example, someone using Microsoft's Internet Explorer could send a secure message to someone using Netscape's Navigator because both packages support S/MIME.

Q: Does S/MIME use digital certificates?

A: S/MIME uses digital certificates based on the X.509 format, a standard for how digital signatures can be sent over the Internet.

Q: Does S/MIME work only on the Internet?

A: S/MIME isn't Internet-specific and can be used on any E-mail network.



HOW S/MIME WORKS

① Mary wants to send a secure message to John. She encrypts the message with his public key and wraps it in a digital certificate. The digital certificate contains information that identifies John, such as his name and E-mail address.

② The digital certificate that contains the encrypted message and public key gets put into an "envelope," which is S/MIME-compliant. The envelope protects the data.

③ The protected data gets sent across the Internet.

④ John receives the message. He is running a software package that allows S/MIME. It allows him to open the envelope.

⑤ John uses his private key to decrypt the data and read the message.

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OPINION

What's good for Microsoft . . .

Meet Bill Gates, politician. He probably won't like the label much, but that's what Microsoft's chairman has become. He's no longer campaigning just for your information technology dollars. Now he's lobbying for support in an arena far beyond your offices.

Last week, Gates warned that any action delaying the release of Windows 98 would do more than upset Microsoft's product plans. "Blocking Windows 98 would be a step back for America," he declared in a speech peppered with patriotic catchphrases.

Remember the old slogan, "What's good for General Motors is good for the country"? Well, Gates invoked that 1950s chorus for U.S. commerce while arguing against any action by the Justice Department and states' attorneys general to curtail Microsoft's business plans.



Flanked by his co-dependent partners in the Windows-dominated PC industry, the PC mogul-turned-politician claimed that the cost of delaying Windows 98 means more than a few wasted dollars on promotional campaigns or lost sales for makers of PCs, software and scanners.

This, my fellow Americans, means lost jobs and a spattering engine of information technology growth.

Gates' remarks may have been aimed at government lawyers, but he was clearly speaking to Congress and Wall Street as well. He even sent up a smoke signal to rival Sun Microsystems, Oracle and Netscape (Hey, if the government can stop our technology plans, what about yours?). And he was speaking to you, hoping to rally the people making technology-buying decisions.

But like any politician's bluster, this self-serving spin goes only so far. All this rhetoric for Windows 98, a minor upgrade? IT professionals care a lot more about what's up with Windows NT 5.0. You care about connecting your business to the Web, resolving year 2000 bugs and installing enterprise resource applications.

Chairman Bill was serving up fighting words in political circles, and maybe even making a few waves in Washington. But from where you sit, it must look only like smoke.

Michael Goldberg, assistant news editor
Internet: michael_goldberg@cw.com



LETTERS

How should we deal with teen-age hackers?

I HAVE to disagree with editor Paul Gillin's March 23 Up Front column about the teen caught hacking the local pharmacy and phone loop ("Slap on the wrist").

Gillin seems to undervalue the most severe and highest-impact punishment given to the alleged punk: "loss of baud for two years." Surfing and hacking is the total embodiment of this kid, and losing baud will force him to redefine who he is.

I don't approve of the hacking or condone it, of course. But I would take a public whipping or cash fine or public service over loss of baud for two years any day.

Frank Aksdigian
Alice, Texas
aksdigian@vista.com

I AGREE with Paul Gillin that the punishment handed down to the teen-age hacker was inappropriate. I also agree that in the future,

Let's have some real examples of year 2000 problems

WITH ALL the debate over the year 2000 problem, I wonder if the hype matches the reality. We see in Computerworld and other industry sources such phrases as "software glitches may cause such-and-such to happen." But has anyone seriously attempted to quantify or qualify these statements? Real examples would make more sense than vague assertions.

How about Computerworld starting a forum where real-life examples of code glitches and their

hackers (teen-agers or not) should be held more accountable for their actions. But I do disagree about whom should take the blame.

Gillin writes that the frequency

case, they did their job, for the hacker was identified and brought before the courts.

Keith Clark,
senior patrolman
West Dover, Vt.

I AM ABSOLUTELY opposed to harsh penalties for teen-age hackers. These young men often have no idea of the seriousness of what they are doing. For the most part, they are driven by the intellectual challenge rather than the desire to do harm. How would a long prison sentence help anyone?

It is not going to undo any damage they may have done.

Why is such hacking possible? Is it a bank leave money where someone can reach in and get it? That hacking is even possible reflects a failure in the system being attacked. Security should be good enough to keep out these teen-agers. If teenagers can hack in to big systems, what can organized crime or terrorists do?

Justin Bonnard Galen Skywatcher
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Computerworld welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Marylyn Johnson, Executive Editor, Computerworld, PO Box 917, 900 Old Connecticut Path, Framingham, Mass. 01702; Fax number: (508) 875-2921; Internet: letters@cw.com. Please include an address and phone number for verification.

'We ran a tight shop'

Joseph E. Maglitta

In a week electric with the latest Microsoft/Justice bout, merger-mad megabanks and tech stocks bobbing and squirming for Wall Street's cruel pipers, there was no room for a death notice.

The nation's oldest commercial data center was dead at 43.

The Franklin Life Insurance Co. is closing the Springfield, Ill., data center it opened in January 1955. The new parent company, American General Life and Accident, has consolidated processing in Houston.

The Springfield data center isn't quite buried yet. The facility still monitors schedules for the Houston mainframe. T3 lines prudently like IVs. A skeleton staff of 10 remains.

On his first unemployed day since the Carter administration, John Davidson, Franklin's associate director of IT, looks back. "We ran a tight, old-school shop," he says.

Indeed. The story of Franklin Life is a

reasonably complete history of big iron business computing.

Franklin purchased a Remington-Rand

The nation's oldest commercial data center is dead at 43.

Univac Fac-Tronic System on Sept. 9, 1953. Cost: \$1 million. Processing began Jan. 5, 1955. That machine whirred along until 1967, when it was sent to the Smithsonian.

The 1950s. '60s and '70s saw a parade of Univacs, then IBM's. All told, Franklin installed 16 processors. The last ceased production Feb. 24. It was removed the week of April 13.

Davidson's own two-decade career at the company is deeply entwined with

Franklin's icy DP kingdom.

After drifting through Los Angeles and Phoenix, Davidson returned to his hometown in 1977 "with a '65 Chevy, a couple of buddies and \$20 in my pocket." Two weeks later, he answered Franklin's newspaper ad. During the next few years he advanced through such as business operator, console manager and night-shift production supervisor. Those arcane mainframe tasks may seem marian to a new generation of Internet hotshots. But for a generation, they meant entry into the Computer Age.

In 1995, Davidson was named associate director of IS operations. "I was a grant delivery boy who worked his way up through the ranks," he says. "I thought I was a lifer."

Until last fall. An American General rep showed up one day to make it official. "They sat 50 people down in a room and made a gruff announcement, saying, 'This is the way things are. We hope to be out by November,'" Davidson pauses. "They didn't know about the center's history or anything."

Part of you wants to scream. "How could you not see it coming? Haven't you ever heard of client/server? The Internet?"

But not everyone wants to (or can) be a Master of the Computing Universe. Some people just want a decent job close to home. One that leaves time for family.

Still, part of you says, "Those consolidations are old news. Who hasn't been nipped? Suck it up, man."

Davidson has sucked it up. Despite no farewell party, no choked-up goodbyes. "We plan on getting together and using what's left of the coffee money for a keg of beer," he says. Despite bosses ignoring his pleas to reconsider.

Davidson, now 40, is lucky. He's been offered an 18 director job in Decatur, Ill., an hour away. "It's a smaller Unix shop. I can learn new technology," he says. Davidson is less sure how his two dozen staffers will fare. "There are four mainframe shops" in Springfield, he says, "but they're all staffed."

Davidson can swallow the pain and shame of the new bosses pulling the plug on his watch. "Business is business," he says.

What does hurt, though, is the quiet. "We died," he says. "and no one noticed." □

Maglitta is Computerworld's industry editor. His Internet address is joseph_maglitta@cw.com.

A new era of outsourcing

John Gantz

Spring is forecast season at IDC. And most of our five-year forecasts are in. The data has been sliced and diced, pricing assumptions checked, outside factors considered. After looking at those forecasts, I'm reminded of the line from *Jaws* where Chief Brody says to Quint: "You're gonna need a bigger boat."

There is no way we will have enough trained people to scale the wall of opportunity that new computing trends afford us. You know that Windows NT is creeping across the enterprise like kudzu. Did you know that 40% of end users — according to a 1997 International Data Corp. (IDC) survey — say their NT applications are mission-critical? And that spending on critical services worldwide is expected to grow fivefold in five years?

And how about this: IDC also reports that spending on enterprise resource planning software will grow fourfold in the next five years, to more than \$45 billion. Or this: IDC research indicates that more than 25% of U.S. businesses expect a major supply-chain automation project in the next two years. You think

those applications alone won't take more people than are currently available?

Eventually, every major IT project will be considered critical, every project will affect business processes and require organizational change; and every project will need to be finished yesterday.

I don't see how a general-purpose IS organization can keep up. IS budgets will increase, according to IDC, about 10% per year for the next five years, which would normally require at least a 5% growth in the labor pool just

I don't think it's growing that fast.

But if most of that spending growth is on new, critical, cross-departmental or cross-company applications, then business spending must grow even faster.

Not only will there not be enough IS staff to handle the application development and implementation load, there won't be enough business-oriented staff in end-user departments to handle it, either. Companies will, out of necessity, reach outside for help, but to whom?

The outsourcing industry is undergoing a major transformation. In the future, if you want to be an outsourcing, you'll have to manage a whole distribution system or run the human resources function much as ADP has always managed payroll.

You may have to measure the success of your sales force automation applications in leads generated, not in laptops upgraded.

Ryder, the truck rental company, now

offers logistical services to others. I.D. Edwards is partnering to offer human resources services. Banks offer IT services to other banks. Most of the major outsourcing are cranking up practices in select areas to compete with that new breed of solution-specific outsourcing.

By the middle of the next decade, after the year 2000 and euro problems die down, your enterprise will be crawling with outsiders. Former employees returning as highly paid subcontractors. Systems vendors offering multivendor services you can't take the time to handle yourself. Specialty firms running entire business functions. Internet service providers running your Web site.

The job of the IS manager, which has changed over the years from the care and feeding of computers to the management of professional staff, will change once more. The IS manager will become the impresario who books the various acts that combine to form an ongoing IT management function.

Good luck. □

The IS manager will be the impresario who books various IT acts.

Gantz is senior vice president at IDC in Framingham, Mass. His Internet address is jgantz@idc.com.

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View your workers as intellectual capital

Don Tapscott

The eldest of a generation of 80 million youngsters (currently aged 1 to 21) are entering the workforce. They are the first generation to grow up in the Digital Age and are increasingly networked, independent, innovative, knowledge-sharing, independent, entrepreneurial and global in orientation.

They are leaving school armed with the most powerful tools for wealth-creation ever invented. And typically, they know more about computers, the Internet and collaborative innovation than their parents, teachers and — soon — their employers.

The bottom line is that as members of the Net Generation take their first jobs, the command-and-control hierarchy — Dilbert, Inc. — is in deep trouble. Because those kids will want a share in the wealth they create — we won't be able to treat employees as a variable cost much longer. Rather, it makes sense to treat them as intellectual capital.

NET GENERATION

In the coming decades, we will measure the key assets of a firm not by

The rise of the Net Generation demands that we rethink the way we view and treat employees.

counting its plant, machinery, buildings and the like. Even traditional capital — financial assets — is fleeing. Twenty-five years ago, Microsoft had no capital. Today, it's the fourth most valuable corporation in the U.S. And as years from now, Microsoft once again won't have any capital if it makes a

couple of big mistakes in the market. Increasingly, the key form of capital is human.

That doesn't necessarily mean that human capital should be recorded on company balance sheets (a complex debate). But it does mean that companies will need to treat Net Generation capital well, because it is precious. Net Geners can't be treated as a variable cost — not just because they're human beings, but also because as a generation they are smart, confident, mobile and connected. To perform effective knowledge work, they must be motivated and col- laborate well.

With Net Geners, in contrast to production lines, management can't simply turn the dial and up the speed. You can't issue an edict that says, "Management wants twice as many innovations per month."

There's no reason companies can't create a new kind of contract with employees. Whether workers are part time, mobile telecommuting, contingent, contract or all of the above, relationships can be forged that are based on clear expectations, mutual support and trust, commitment and com- munity. The ball is in management's

court on this one.

Most important, firms will be forced to develop new ways to compensate employees increasingly based on the value they create. That will include a profound democratization of corporate ownership.

Recently, in a late-night conversation at the World Economic Forum in Davos, Switzerland, *Fortune* magazine editor Tom Stewart pointed out to me that half of the shares of Microsoft were purchased with traditional capital — money — and the other half with intellectual capital. People acquired wealth in exchange for their knowledge and work. Stewart mused that in the future, employees should be treated as "investments of intellectual capital."

Such fresh thinking could enable firms to retain their most precious assets and sustain innovation and wealth creation, not to mention bring a little more social justice into the economy. □

Tapscott is chairman of the Alliance for Converging Technologies and an authority on the impact of the digital media on business and the economy. He is the author of six books, including the best-sellers *Pathfinders* and *The Digital Economy*. His most recent book is *Growing Up Digital: The Rise of the Net Generation* (McGraw-Hill, 1998).

The Web is the world's longest lever

David Moschella

As banks, brokers and insurance companies swallow one another up, it's hard not to wonder whether technology is in fact starting to favor bigger and more diversified players.

For most of the past 15 years, the market has rewarded businesses for becoming more specialized and more focused. Has that begun to change?

Whether financial services super markets are a good idea or not is almost anyone's guess. I tend to think there will be both highly diversified and highly specialized players. It's being in the middle that will prove difficult.

But the more important question is whether financial industry diversification is a precursor to a larger business trend. As specialized companies mature, there's always the temptation to expand services around a particular competency, community or brand. But is that a better idea now than it was a decade ago? Consider the following two hypothetical questions, which will help determine whether Citicorp/Travelers is indeed the model for the future:

1. Should Amazon.com extend its expertise in online retailing to sell CDs, videocassettes, software or similar consumer products?

2. Should Dell leverage its ability to sell and support expensive and complex hardware by expanding into online sales of televisions, stereos, VCRs or video cameras?

3. Should Century 21 or other major real estate brokers sell landscaping, painting, renovation, decoration, insurance or other services to new homeowners?

4. Should airlines expand their interest in selling hotel, car rental and tour packages? Should they seek to make package-fiber miles the Web's common currency of exchange?

5. Should managed health care companies provide vitamins, exer-

cise equipment, self-help books, nutritional counseling or health club memberships?

6. Should automobile manufacturers expand into insurance, repairs, navigation systems or driver's education?

7. Should Federal Express offer pages, copiers, Internet access or other business and communications services?

8. Should universities expand into personal finance or vocational training?

9. Should computer trade publications expand into conferences, seminars, industry research or similar information services?

10. Should computer hardware companies expand into software and services?

Clearly, some of that is happening already. But the real

question is whether that type of expansion will become an important competitive advantage. Although the desire to leverage brands and competencies is nothing new, the Web does provide important, enhanced capabilities. Once a community is actively established, it can become a powerful platform for delivering related services.

The appeal of bundling and integration is seen in the IT industry every day. Although it's now possible to build complex software through individual components, most consumers tend to go for an integrated application, even if it's one of Microsoft's "monolithic hair balls," to use Scott McNealy's phrase.

In the end, the question comes down to the relationship between core competencies and community service. If a company has clearly established the former, the Web provides an unprecedented ability to expand into the latter. □

Should Century 21 sell landscaping? Should GM sell driver's ed?

Moschella is an author, independent consultant and weekly columnist for Computerworld. His Internet address is moschella@earthlink.net.



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LETTERS

Elegance story strikes chord with readers

LOWE Computerworld's In-Depth article on elegance in programming ("Software elegance," April 20) especially hit the box on binary searching.

The way the article was written, too, using just the right number and type of words to get the ideas across and make them sparkle. Congratulations on another fine job.

Donna Raimondi
Rogers Communications
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GRATEFULLY ENJOYED the Computerworld article on software elegance. As an old-salt programmer, it brought me back to my university days, when one of the best professors I ever had taught me the concept of elegance in programming.

I would like to point out, however, that Gary H. Antes left out one of the most obvious and enduring examples of elegance in the microcomputer world: the Mac OS operating system. It's still a lot more elegant than any incarnation of

Windows, and it was there a long time before Uncle Bill ever thought of an icon or a mouse.

John Dreissel

Exton, Pa.

COULDN'T AGREE more about the importance of elegance in systems design. However, as you are probably aware, there is a typo in your illustration on binary searching. Log-base-2 of 1 million is on the order of 20, so there would be roughly 20 iterations for a million-element array. There would be 30 for a billion-element array.

Thank you for the wonderful article. Perhaps one of my former managers will look at it and finally understand why I quit my job to start my own company.

John C. Jones
President
Era Vira, Inc.
Austin, Texas
jcgjones@alum.mit.edu

I HAD EDITORIAL on software elegance ("Beauty and the software beast," CW, April 20). Maryfran Johnson uses the an-

alogy of a ballet dancer and a sumo wrestler to compare a 450K-byte program with a 30M-byte program.

That underestimates the blot factor is a common perceptual problem in a Microsoft-dominated world.



If one average 360-pound sumo wrestler is equal to four average 90-pound ballet dancers, and a 450K-byte program is a ballet dancer, then a sumo

program would be about 1.8M bytes. A 30M-byte program is thus beyond human scale.

To keep it on a popular-image level, you could accurately say the two programs were like a lithe ballet dancer confronting a hulking Mack truck.

James M.C. Yeager
Technical writer
Radius Systems
Alexandria, Va.

pride in format and style is dwindling. Shoving code into a convenient place instead of the right place lacks any form of consistent style.

Along with this gripe, the bloat in all code nowadays is incredible. I can remember doing exercises using the same areas for input and output, just sharing to keep the size of the code down. But let's face it: Half the kids getting into IT nowadays are considered functionally illiterate. How can we expect them to code pretty?

Thanks for the great articles.
Tom Avagardo
New York
tavagardo@bigfoot.com

THANK YOU for reminding the IT community that elegance still matters in the world of software.

Those who write greedy, thoughtless code in Microsoft Visual Basic or Sybase PowerBuilder tend to forget that their application must share computer resources with other applications. How many "bulking sumo wrestlers" can fit into a PC?

Michael Yam
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Beware of some fixes for the IT skills shortage

I HAVE BEEN reading all the hoopla about the technology employee shortage and ways to fix it. I find three of the ways that were mentioned very disturbing.

No. 1: Change the immigration laws. U.S. companies don't realize how many foreign competitors would like to steal their strategic commercial information and put them out of business. It increases the risks drastically if you let noncitizens access vital company information without thinking about the consequences.

No. 2: Outsource. What a joke! We are in the midst of outsourcing, and the outsourcing is facing the talent shortage. Turnover for this outsourcing is high (and it is one of the big three outsourcing companies), and risk is high for our company because of that.

No. 3: Train any warm body to be a programmer. That's great if the person has talent for IT work. But I've had to work with code that was written by programmers who really should have picked another career.

Companies had better realize

that if they have good IT workers, they should keep them at all costs. When the shortage is over (and one day it will be), remember the good.

Rebecca Troxell
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rtroxell@qldai.com

A single number should provide voice, data access

COMPUTERWORLD columnist David Moschella's March 9 article ("Do we need domain names at all?") makes a direct hit in the "Battle of the Domain Buge."

Web addresses are as confusing as anything the technocrowd have come up with to date.

As a marketing communications consultant, I cringe every time I hear a broadcast ad on radio or TV with the "www" tag after the toll-free number has been given. It continues the myth that anything to do with computers must be difficult and geeky.

The way it should work, as Moschella proposes, is that we should go to a totally numerical system. In fact, why not use the

current telephone system? Companies could use their current phone number to give customers voice, data or video access depending on the user (human or machine) that's calling. There could be a data layer under the current phone number system containing the business name, mailing address, Web site, electronic-commerce site, etc.

Internet access, just like operating systems, must be more user-attentive, not the other way around.

If computers (and VCRs) were more like phones, then "unnatural" software and Norton Utilities wouldn't be cemented in the top 10 best-selling products each week.

Doug Meyer
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The training myth

COMPUTERWORLD has looked at IT training only from the point of view of employers training their staffs.

True, the cost/benefit ratio is out of whack for companies, but look at it from the position of

someone trying to pay out of his own pocket. I started some training to help fill this so-called shortage of IT personnel. But the training was poor and very expensive.

The \$50,000 annual salaries mentioned by the schools and others (check out Microsoft's Web page) keep the schools full. But the sad truth is that the training isn't enough. Without "mission-critical" experience you won't get a job for \$50 an hour.

George Cramer
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Spammer, heal thyself

I WAS DISAPPOINTED when I read Maryfran Johnson's editorial about fining spammers ("Stamp spammers," CW, March 23). Just because she was irresponsible and forwarded an E-mail without first reading it thoroughly does not make the sender of that message the villain. Rather, it seems it makes her a "spammer" using her own definition.

Ed Pultz
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Year 2000 + millennium

THANKS TO constant coverage of the year 2000 problem by Computerworld, I have succeeded in lighting a fire under our senior management and generated some much-needed support for resolving this problem.

Our situation was all too typical: Nobody seemed to understand how two missing digits in a date could cause so much havoc. What worked was a propaganda blitz of endless memos, to which were attached copies of Computerworld year 2000 articles.

But I feel compelled to address a consistent error that seems to arise in discussions of the date rollover: The year 2000 is not the start of the new millennium. As any aficionado of science fiction or technical trivia knows, the new millennium and the 21st century begin on Jan. 1, 2001. Referring to the year 2000 problem as a "millennium bug" is incorrect. But please, don't let that stop you from continuing to publicize this problem!

Bill Brier
Spong-Cushion, Inc.
Morristown, N.J.

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CFOs don't fear 2000

A study found that only 17% of the chief financial officers surveyed are "very concerned" about year 2000 woes, and almost half aren't worried at all. In a survey of 1,000 CFOs at companies with more than 50 employees, 48% said they aren't concerned about the financial implications of the millennium bug, according to IBM Management Resources, a recruitment firm in Menlo Park, Calif. IBM said CFOs ought to be concerned, because accounting systems and financial databases are among a company's most essential applications and rely on date-sensitive data.

Buying spree

Continuing its buying spree, Boston-based Konsus, Inc. has completed its acquisition of GSE Credit Software, Inc., an information technology consulting company in Salt Lake City. Konsus has also announced plans to acquire Chicago-based Becker & Associates, Inc., an operations improvement consulting firm. Konsus also recently acquired Group Systems, an application development and software consulting company in Pittsburgh.

The digital economy

■ Information technology has been responsible for more than 25% of real economic growth over the past five years.

■ The 7.2 million people who work in the U.S. IT field earn an average of \$46,000 per year, compared with \$28,000 for the average U.S. private sector worker.

■ Without information technology, overall inflation would have been 3.3% last year — more than a full percentage point higher than the actual figure of 2%.

Source: "The Digital Future Report," 2000, U.S. Department of Commerce, Washington.

Business value ideas win gold

By Julie King

SPURNING THE LATEST and greatest in favor of tried-and-true information technology could land you an award.

It worked for three of four of this year's winners of the prestigious Awards for Achievement in Managing Information Technology.

The Commonwealth of Massachusetts, for example, tapped a commercial network of automated teller machines to electronically deliver benefits to welfare recipients.

And Texaco, Inc. purposely left a central data warehouse off its list of IT tools. Instead, it used distributed databases to create a three-dimensional system for analyzing oil fields.

Senate panel pushes for repairs

By Matt Hamblen

SO YOU THINK you've heard enough about year 2000 problems? Be prepared to hear more.

The U.S. Senate recently created a special committee on year 2000 to focus more attention on the problem in hopes of getting more of the private and public sectors ready.

The new Senate Special Committee on the Year 2000 Technology Problem has no legislative authority, but it will prod and push nearly all the other standing committees, including Appropriations, to take action, its members promised.

The committee has a budget of \$575,000 to last through September and a small staff.

The awards, jointly sponsored by Carnegie-Mellon University's Graduate School of Industrial and Systems Integrator American Management Systems, Inc. (AMS) in Fairfax, Va., honor business and technology people for their innovative uses of technology to achieve measurable business value. Following are brief profiles of this year's gold award winners:

WINNER: Michael J. Zeitlin, portfolio manager, Texaco's Integrated Data and Visualization Technology team

COMPANY: Texaco, Inc., Houston

PROJECT: Created a way for

Award winners, page 42



PHOTO BY MICHAEL J. ZEITLIN

Customer service pacts call for close management

► Team leader should be link to outsourcer

By Julie King

AS MORE companies farm out technical support, product hot lines and other kinds of customer service, information systems departments are finding they need to build technical and business relationships with customer service outsourcers.

On the technical side, one common approach is for IS and the outsourcer to jointly build interfaces between their systems.

For example, soon after Taco Bell outsourced the group that fielded inquiries from customers to Precision Response Corp. (PRC) in Miami, the two built a custom PC-based application that lets the outsourcer's representatives search Taco

Bell's product databases.

At American Express Co., which has outsourced payment processing, billing inquiries and telemarketing to three different providers, the IS department helped install an integrated voice-response system that identifies different types of calls and then automatically forwards them to the appropriate outsourcer.

Regardless of how the relationship is set up, experts agree that companies on both sides must dedicate a single person or team to manage it.

Equally important is that both parties set out and agree to very specific performance measures up front, said Michael Corbett, Customer service, page 44



Sen. Robert Bennett's year 2000 panel will "serve as a central clearing point of information."

The Software Institute in New York pegs the total 1993 customer service outsourcing market at \$7 billion.

Gold award winners

CONTINUED FROM PAGE 41

scientists to analyze oil field data in 3-D.

BUSINESS VALUE: Texaco can now recover 20% to 40% more oil from existing fields and more accurately identify new drilling sites.



Texaco's Michael Zeitlin observes the Visualization Center application that earned him a gold award. The 3-D system has saved the company money — \$40 million in one project.

SUMMARY: Texaco geologists used to view cross-sections of seismic data from oil fields in two dimensions — much as a physician views an X-ray. Zeitlin's technology lets geologists take a virtual walk through an oil field to study more closely what's there.

The result: "You end up finding hidden pockets of oil that were overlooked," Zeitlin said.

The 3-D analysis has also saved big bucks. In one case, managers using previous data analysis methods had decided to drill a new well in a particular location. But a subsequent 3-D analysis made them change their minds and saved the company an estimated \$40 million.

A unique feature of the 3-D system is its use of multiple asset databases. Early in the project, Zeitlin rejected a central data warehouse as too expensive. Instead, the system

uses distributed data marts and lets them share data using the industry-standard Epacenter data model.

"Texaco has a unique advantage," Zeitlin said. "We're the only company with this 3-D

technology, which helps it deliver orders a whole lot faster.

For example, in 1995, the DLA had to support a rapid buildup of forces in the U.S. sent to Kuwait in response to moves by Saddam Hussein. By electronically sharing order data among several private uniform manufacturers, the DLA was able to deliver 100,000 uniforms to Kuwait in less than four weeks. Under the old process, it could have taken more than six months, Molino said.

"I personally am not a technical person," said Molino, who has since retired from the DLA and works as a private logistics consultant. "But integrated logistics doesn't work without information technology."

Molino's biggest challenge wasn't technical. It was getting people to focus on serving customers rather than their own small role in the supply chain.

"We had people who had spent their entire careers thinking about what location a particular repair part should go in," Molino said. "You had a lot of inefficiencies associated with people doing a piece of the logistics chain rather than the whole chain."

To overcome those nontechnical hurdles, Molino gave four-hour training classes on electronic data interchange to every person involved in any aspect of the supply chain.

WINNER: Robert L. Molino, former executive director of procurement

ORGANIZATION: Defense Logistics Agency (DLA), Washington

PROJECT: Applied commercial retailing methods and set up an electronic-commerce network at the \$12 billion government agency.

BUSINESS VALUE: Cut costs by \$12.6 million in 1995 alone.

SUMMARY: Since 1995, the agency has changed virtually every aspect of how it buys supplies and gets paid for the \$12 billion worth of food, fuel, clothing and other supplies it disburses to the military each year.

And 70% of the agency's orders now are handled electrons

ability, so we can advertise [to other oil companies] that if you want to find more oil, partner with Texaco."

WINNER: Robert L. Molino, former executive director of procurement

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And 70% of the agency's orders now are handled electrons

"[We] had inefficiencies associated with people doing [just] a piece of the logistics chain." — Robert Molino, Defense Logistics

why reinvent the wheel?"

Under the new system, recipients get a magnetic-striped card that can be created in less than two minutes at benefits offices across the state. Account data is electronically transferred to Milwaukee-based Deluxe Data Systems, which the state has contracted to process financial transactions.

IT

As more programs adopt a common standard, processing costs should drop. — Raymond McCabe, Commonwealth of Massachusetts

The system conforms to the same technical standards banks use to share information to let consumers access cash using their ATM cards in different states.

"Just because a person is on an entitlement program doesn't mean that they may not be out of state visiting a sick relative," McCabe said.

As more benefits programs adopt the common standard, transaction processing costs should drop, McCabe said.



WINNER: Nicholas Kausser, executive vice president/chief technology officer

COMPANY: AT&T Wireless Services, Inc. (AWS), Kirkland, Wash.

PROJECT: Developed fixed wireless technology for delivering local, high-speed digital communications services

BUSINESS VALUE: Launched AT&T into the \$80 billion local

telecommunications market.

SUMMARY: In 1995, Kausser secretly began assembling a team of software engineers to work on Project Angel. Its goal: quickly produce a wireless technology that would help the long-distance carrier become a key player in the highly competitive market for local telephone service.

Kausser put together a team combining product design, engineering, manufacturing and product testing — all working in parallel — under one roof. The team used computer-aided design and manufacturing tools to develop prototypes and test components.

One of Kausser's greatest challenges was convincing talented engineers and programmers to come and work on a project without knowing in advance what it was. AWS didn't acquire the Federal Communications Commission radio licenses it needed for the wireless services until long after the project was under way. If Project Angel had become public knowledge, the competition could have hid up the price of radio licenses to the point that AWS couldn't afford to start the service.

"They couldn't tell them what they would be doing until after they were hired," Kausser recalled. "We'd tell them it was exciting and modern, and then only after they signed a confidentiality agreement, we could tell them."

It worked. Two years later, in February 1997, AT&T announced the new fixed wireless technology that it will use to provide a package of local phone services beginning next year.

Assuming other things, AT&T said the technology will provide

IT

"We couldn't tell them what they would be doing until after they were hired." — Nicholas Kausser, AT&T Wireless Services

an "anytime, anywhere" access to customers using a single handset and single telephone number. And because AT&T developed the technology in-house, it doesn't have to worry about competitors buying off-the-shelf systems and jumping into the business themselves, Kausser said. □

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Panel targets year 2000

CONTINUED FROM PAGE A1

a central clearing point of information as the public and private sector work to tackle this daunting problem," said Sen. Robert Bennett (R-Utah), committee chairman.

It is already too late to solve the

entire problem, Bennett said, though some industry officials are more optimistic, and most are far from predicting catastrophe.

The private sector quickly took note of the committee's establishment. "We're

very aware the special committee might not have legislative powers, but it will have tremendous powers," said Art Thomas, chairman of year 2000 strategy for the Securities Industry Association in New York. Thomas is also senior vice president of global operations at Merrill Lynch & Co. in New York.

Awareness of the year 2000 problem among banks and brokerages is "huge," and financial companies are far along in

making fixes and working with data carriers to ensure that networks will operate, Thomas said.

INVESTMENT CONCERN

But awareness isn't as high among small businesses and consumers, Thomas and the senators said. And it is a delicate matter, considering how investors react to the slightest rumor.

"We don't need to scare individuals unnecessarily," Thomas said. He said the financial community is developing contingency plans in the event that problems develop.

The vice chairman of the committee, Sen. Christopher Dodd (D-Conn.), said many large companies in the U.S. are "well along" in solving the problem, but he added that problems may develop with companies abroad and small domestic companies.

The committee will be a convenient contact point in the legislative branch for the new President's Council on Year 2000 Conversion, senators said. □

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COMPUTERWORLD

The Newsweekly for Information Technology Leaders

Customer service

CONTINUED FROM PAGE A1

an outsourcing consultant in Poughkeepsie, N.Y.

"Call response times, hold times and drop rates must all be defined contractually. So does how payments will flow to the provider," Corbett said. The foundation for any successful outsourcing arrangement is a scorecard on which users specify in an objective and quantifiable manner how they will measure the success of the relationship, Corbett added.

Looking ahead, Rick Favro, a vice president at MCI Systemhouse, Inc. in Atlanta, sees customers service out-sourcers playing an even greater role, particularly in the area of identifying new sales opportunities.

For example, in a recent pilot test with a large financial services company, MCI Systemhouse discovered that customers who called several times in the same month to check a car loan balance were typically getting ready to pay off the loan.

"More and more, we're trying to put hooks into systems to capture data about events as they happen," Favro said.

"That way, the financial institution could call up their customer and say they're preapproved for an even bigger new loan," he said. □

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At one time, engineers worked in idyllic corporate Edens (left alone to "do their thing"). Today they have to integrate

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o n e

SEQUENT

The Internet

Electronic Commerce • The World Wide Web • Intraets

Briefs

U.S. LEADS IN WEB ACCESS

Businesses with a Web site or intranet	23%
U.S.	23%
Asia/Pacific	8.7%
Western Europe	5.9%

Source: International Data Corp., Mountain View, Calif.

Banner buying

Several major retailers have begun testing technology from Narrative Communications Corp., in Waltham, Mass., that lets consumers purchase products directly from World Wide Web banners' ads. Narrative's Endless Impulses can conduct secure credit-card transactions without an ad, so consumers don't need to go from the site they are viewing to the advertiser's own page, Eddie Bauer, Inc., Godiva Chocolatier and Neo-Photo-Prints, Inc. told they are trying the ads.

Marketing Web surfing

A software vendor that lets parents control what their kids see on the Web has come out with a version for Internet Information Systems. Softouch Professional Edition, from Softouch Technologies in Los Altos, Calif., offers different levels of filtering, including by time and day. It also lets administrators generate reports by individual or department. Pricing starts at \$995 for a premium license.

Expenses, travel cutters

Alpha Technologies, Inc., in Encino, Calif., has cut travel and business use of its expense Internet-based procurement software off and instead used expense management capabilities when the product ships to customers. Alpha's travel manager, which will be able to automatically download expense reports from travel corporations, travel cards and other travel partners online, will add automated expense reports that will be passed to providers or payroll systems for reimbursement or payment.

Know your customers

► Web-based tools track customers and reduce service costs

By Kim Girard

TO CUT MANAGEMENT costs and enhance relationships with their business partners, some users are nudging customer management functions over to the Web.

In forming their new strategy, users said true World Wide Web-based customer information systems offer advantages that can't be beat, including easier user training, less expensive support, faster upgrade rollouts and better information sharing with channel partners and distributors.

Aberdeen Group, Inc., a consultancy in Boston, reports that the customer information systems market grew to \$650 million in 1996 and will continue to expand as more companies automate their sales forces.

Honeywell, Inc.'s Home and



Honeywell's Mike Palmer says that with the company's Web applications, salespeople "don't have to go through five steps to do their job."

Building Control division is testing Atlanta-based Firstwave Technologies, Inc.'s Netgain opportunity management tool with 225 users. Mike Palmer, a manager of technology-enabled sell-

tivity management tool with 225 users. Mike Palmer, a manager of technology-enabled sell-

ing at Honeywell, said he expects Netgain to cut service and maintenance costs within the division by 20%. The unit sells and services air-conditioning, ventilation, heating and security systems.

Honeywell uses client/server customer information software throughout the company, but Palmer decided to test new Web applications at the Freeport, Ill.-based division partly because of its need to share information with hundreds of partners.

"With a Web solution, I say, 'You have a browser — you can get on with the program.' We don't care if they're running Windows 95 or NT," said Palmer, a former salesman turned information systems manager.

Honeywell, which uses Oracle Corp.'s enterprise resource planning system for its back-office financial applications, hasn't ruled out Oracle's front-office offerings, Palmer said.

Sales force, page 48

JAVA

Sun talks about changes

Jonathan Schwartz is the new director of product marketing at Sun Microsystems, Inc.'s Java software division (formerly JavaSoft). Schwartz joined the company when Sun acquired his Lightbeam Design firm in July 1996. Senior editor Carol Sliwa caught up with Schwartz after Sun announced its reorganization plans, separating the embedded systems/consumer-device product division from the Java software group.

QW: What changes can Java licensees expect to see?

SCHWARTZ: I think in general the changes are much more to do [with] focus and making sure that we're delivering stable,

Java, page 49

Netscape, Excite agree on search engine

By Sharon Machlis

AS PART OF ITS EFFORT to become a major player in the hot Web "portal" arena, Netscape Communications Corp. has joined with Excite, Inc. in a two-year deal worth at least \$70 million.

The move is aimed at combining some of the advertising power of the Internet's second and third most popular sites.

"One-stop shopping is going to be pretty attractive," said Patrick Kotze, an analyst at Jupiter Communications, Inc., in New York. He added that the Netscape site will be more attractive for World Wide Web advertisers.

NEW CHANNELS

Under the agreement, Excite will develop a search engine for Netscape and create content for some new Netscape channels such as Shopping and Arts & Leisure. The channels deliver information to users' desktops

when they subscribe.

And Excite will sell all advertising for the joint channels and the new "Netscape powered by Excite" search engine. Revenue will be shared between the two companies. Currently, Internet searches on Netscape's site are split among several external partners.

It is unclear if ad rates and partnerships will change following the deal. Excite CEO and

President George Bell said new rate cards haven't been set, but he added, "You don't have to extend your imagination very far . . . to see the increased value of Netscape and Excite together." The agreement begins June 1.

Major sites hold increasing clout on the Web. Despite the tens of thousands of sites springing up across the 'net,' Netscape/Excite, page 48

KEY POINTS OF THE DEAL

- Excite pays Netscape a guaranteed \$70M
- Netscape guarantees Excite certain page-view traffic levels
- Excite will create a "Netscape powered by Excite" search engine, as well as content for some Netcenter channels
- The Netscape search engine receives 25% of all search traffic from Netscape.com in the deal's first year and 50% in the second year. Excite's search engine gets 25% both years
- Excite will sell ads on the joint channels and Netscape search engine

Netscape, Excite shake on Web deal

CONTINUED FROM PAGE 47

the top 50 sites take in 85% of all ad revenue," said Randy Kilgore, advertising director at the *Wall Street Journal Interactive Edition*.

Netscape had the second most popular site on the Web in March, according to figures from RelevantKnowledge, Inc., in Atlanta. Excite was third. (Yahoo, Inc. was first.)

But the challenge for Netscape, as for the Web's major search engines, has been to turn those consumers "eyeballs" into greater ad revenue. That is why so many sites are keen to turn into portals, which offer a wide range of information and services to become a user's starting place on the Web. Microsoft Corp. is rumored to roll out its own portal next month.

"The problem is the [Netscape] Web site has a lot of traffic, but it's mostly involuntary traffic," said Mike West, an analyst at Gartner Group, Inc. in San Jose, Calif. "They want more people to go there deliberately, for content and other reasons." Netscape's browser often is configured to default to the company's site when first installed.

Netscape has been working to boost its offerings at Netscenter, a content area that includes news, commerce and community features. The company recently announced a free E-mail service, among other attractions.

The search engines also have been adding content. Excite, for example, redesigned its entire opening page to let visitors create their own personalized

news and entertainment guides. People who use the customization features return five times more frequently than others, Excite officials said.

In fact, searches now represent just 40% of Excite's daily traffic, down from 95% less than two years ago.

It is still unclear exactly how Excite will leverage Netscape's traffic to boost its own, said Jill Franklin, an analyst at

International Data Corp. in New York. "I think it's a very good deal for Netscape and also for Excite. . . . But will there be dilution between the two portals and hubs?"

"In some senses, we will compete with each other. In other ways, we will need each other," Bell said last week at a press conference.

Excite, in Redwood City, Calif., will pay Netscape a guaranteed \$10 million over two years. In return, Netscape will guarantee Excite a certain level of page-view traffic. □

Staff writer Tom Diederich contributed to this report.

Sales forces benefit from Web-based tools

CONTINUED FROM PAGE 47

But the company is working with Firstwave because it moved quickly to release a Web-based product for midsize corporations and divisions of some larger Fortune 500 companies.

Palmer said the Web better suits sales people's work style because it doesn't tie them to rigid software. Also, it lets them easily gather up-to-date information about competitors and clients.

"Before, when we built a system to manage opportunity, we'd build one sys-

tem and give it to x number of salespeople and ask them to act and talk and walk the same way using it," Palmer said. Now, "they don't have to go through five steps to do their job."

TESTING NEW SOFTWARE

Pennsylvania Power & Light in Allentown, Pa., is also considering Web-based software. Aurum Software's Web-based FrontOffice system, said product manager James Evans. The utility's sales force,

now uses Aurum's SalesTrak software to track customer's utility needs, forecast sales and do team selling. The utility plans to begin testing Aurum's Web-based FrontOffice components in the fall for its 1,150 mobile users.

"The big plus is in the support area," Evans said. "Now we send [upgrades by] E-mail so they can install new software. [But] we don't know that they've done it." Web-based upgrades will simplify the process for everyone, he said. □



Microsoft

Java marketer discusses reorganization

CONTINUED FROM PAGE 47

perform[ing] platforms to licensees.

CW: How much pressure do you feel from Microsoft, which keeps coming out with shortcuts?

SCHWARTZ: The pressure we feel is much more from customers than it is from Microsoft. What we've heard from customers time and again is that they see an enormous amount of value in the preservation of their existing IT assets, as well as the evolution of new systems that are freed from any proprietary underlying operating system. So we feel constant pressure from them to deliver upon "write once, run anywhere."

CW: Is the notion of cross-platform on the client side really dead, as some observers have said? Is server-side Java where you're going to concentrate your efforts?

SCHWARTZ: I think 1998 and 1999 will begin to show the fruits of what an

alternative platform can be. It's tough when you're in an environment where 97% of the desktops are owned by a monopoly to suggest that write once, run anywhere on the client really means anything other than "write once, run on a Microsoft Windows box." But I think as alternative platforms evolve, the definition of "anywhere" really takes on a different character, especially when that anywhere is no longer just what is run on a desktop for the user, but what is run on a kiosk, what is run in a hotel room, what's run in a set-top box, what's run in your kitchen.

CW: Can you envision where you think Java will be a year from now?

SCHWARTZ: I think you'll see movement on four fronts. One, I think that you'll see the next release of the Java Development Kit, 1.2 — and it may be renamed — will have stabilized to the point where from a functionality perspective it'll be as mature as if not super-

ior to all the other desktop environments around. It really provides enterprises with an alternative platform for the delivery of network stable apps.

Secondly, I think you'll see Sun as a company being a lot more focused around the delivery of and the evolution of platform-independent systems. Java will really begin to catch some momentum in the smaller spaces, both smart cards and embedded and personal devices.

Thirdly, I think you'll begin to see the absorption, if not establishment, of the enterprise side of Java really beginning to take hold with our partners. The amount of momentum around the Enterprise JavaBean spec has really been surprising to me. It's been very successful.

And fourthly, I think we'll really begin to see in this fiscal year and in the coming calendar year the large-scale deployment of enterprise custom applications really begin to leverage the network in all of its forms — not just that which attaches a server to client but that which attaches customer to infrastructure and customer to customer. □

NEW PRODUCTS

INTERNET IMAGE, INC. has announced Version 1.0 of TargetLink, a Java-based software distribution application. The application uses a TCP/IP transport layer to move content to networked clients using the Internet. It can target Windows, Unix, Macintosh or network computer clients. Agents create two-way links between senders and recipients, so it can monitor information delivery, track client requests and keep client profile records in the server.

A 100-seat server costs \$6,000.
Internet Image
 (310) 739-3050
www.internetimage.com

ADBE SYSTEMS, INC. has announced ImageReady 1.0, image processing software that tests graphics for World Wide Web site design. The software tells users how a graphic will appear on the Web, its file size and its download time.

ImageReady costs \$399.
Adobe Systems
 (650) 965-4400
www.adobe.com



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Briefs

LOW ROUTE

This year, for the first time, users are expected to spend more for low-end routers than for high-end routers. The average revenue growth rate for low-end routers from last year to 2001 is predicted to be a healthy 24% per year.

Source: The Dell'Orto Group, Portola Valley, Calif.

Low-cost switching

OpenGear, announced at NetworkWorld/Interop '98 last week in Las Vegas, a low-cost Layer 3 switch designed to extend switch-based routing to the enterprise. The Routerscape-plus provider routing at up to 5 million packets/sec, on top of its LAN switching duties. The switch costs \$999 per port. The system has a 40Gb/s bidirectional port, and uses Gigabit Ethernet port. It will ship this month.

Project Xerox in mind

Lattice Development Corp., in shipping the Lattice Page Gateway 5200, software for connecting Notes mailboxes using pages and cellular phones. The upgrade includes Wireless Domino Access, software for connecting Notes mailboxes from telephone over wireless IP networks. It costs \$995.

Locate buys Yarsis

Locate Technologies in Warren, N.J., recently sold it will spend about \$2 billion in cash for Yarsis Systems, Inc. in Livonia, Mich. Yarsis makes Asynchronous Transfer Mode message products for forwarding voice, data and video traffic over wide-area networks. Yarsis CEO Jeanne Kinn will join Locate as president of carrier networks.

U.S. ISDN SALES

1996	\$3.8B
1997	\$5B
2000	\$9.2B*

* Projected

Source: Marketing Technology Group, Greenwich, Conn.

'net helps wither winery phone cost

► Virtual net links remote Mondavi workers cheaply

By Bob Wallace

EVEN ROBERT MONDAVI Winery's most expensive bottle of wine costs less than what its field salesmen in Thailand was paying to check his E-mail and product sales data.

The Mondavi worker was running up a \$2,000 monthly telephone bill in international calls to the winery's Napa, Calif., headquarters. He now pays only \$100 per month to access the Internet.

Winery employees are raising a glass to the answer to the high-priced phone bill: a virtual private network (VPN) that supports remote workers.

"It was a dollars-and-cents decision to go with a VPN because we have remote employees logged on for long periods of time from places like hotels," said Mike Davis, director of information systems at the win-

ery. The virtual network supports roughly 100 mobile users.

With a virtual network, which sends data over the Internet protected by encryption or other security, Mondavi found that it didn't have to worry about line quality. It could also let employees stay connected as long as they needed and get better throughput. The winery hasn't determined total savings.

A virtual network can perform better than international phone lines, even if the same-speed modem is used. "You can never get a 38.8K bit/sec. on an international line; you can when you're dealing a local [point of presence]," Davis said.

"Users can save up to 80% by outsourcing remote access to things like VPNs," said Katty Weldon, a senior analyst at The Yankee Group, a Boston consulting and research firm. "But

Robert Mondavi's Mike Davis: The winery's move to a virtual network "was a dollars-and-cents decision"



if you don't already have security products, the savings will be a little less."

Most companies that use virtual networks for remote access applications launched them within the past six to eight months, she said.

But Mondavi's virtual networking effort began roughly a year ago.

Phone bills were manageable when remote workers were dialing in to the winery's Microsoft

Winery, page 52

SUPPORT ISSUES

CA to create own service division

By Patrick Dryden

COMPUTER ASSOCIATED International, Inc. tried to buy its a global technology services provider, but that didn't work. So now it will attempt to build its own.

CA previously tried to buy its way into the services market by pursuing Computer Sciences Corp. (CSC), which rebuffed its overtures. Then, news that CA was back on the acquisition path may have triggered Wang Global, a \$3 billion service provider with headquarters in Billerica, Mass., to adopt a shareholders' right plan May 1 to blunt takeovers, analysts said.

Now, the goal is to have 2,000 more support specialists, acquire smaller systems integrators in key global markets and reap \$1 billion in service revenue. Those were among the promises made by Charles Wang, CA chairman and CEO, to 25,000 users, partners and staff at the recent CA-World '98 conference.

"We will grow organically and acquire strategically," he said.

Wang joked that the growth plan is "Plan B" after the CSC acquisition didn't work out."

CA announces, page 52

Central E-mail server tempts users

► **Netscape announces high-volume E-mail server, for release this year**

By Barb Cole-Gromski

BLAIR DILL, manager of messaging and collaboration at The Sabre Group, Inc. in Fort Worth, Texas, found some appeal in Netscape Communications Corp.'s recent promise that it can save users money by concentrating more E-mail users on one server.

"If you can centralize E-mail, you can reduce your administrative costs," Dill said. Netscape previewed its new E-mail server, code-named Troopers ISP, at last month's Electronic Messaging Association '98 conference in Anaheim, Calif.

CENTRAL SERVER

The product is scheduled to ship by year's end. It was designed as a scalable, centralized corporate E-mail server based on the Internet Message Access Protocol 4, which gives users more flexibility in the way they download and store mail than the current Post Office Protocol specification.

Netscape executives said the server will be able

Netscape, page 52

Netscape takes new E-mail tack

CONTINUED FROM PAGE 51

to support an almost unlimited number of users.

Sahre already uses some Netscape Messaging Servers for users who want native IP support. But most of its users are on Lotus Notes and Microsoft Mail, both of which support IP by layering support for its proprietary protocols.

To date, Netscape's E-mail strategy has been to play up its support for IP standards, which the company said result in lower administrative costs.

"Netscape is now ready to be considered by big customers, so the fur is really going to fly."

— Nina Lytton,
Open Systems Advisors

US West Communications, Inc., on the other hand, has about 15,000 users on Netscape's E-mail and can support thousands of users on a server now, said Barbara Bauer, senior director at US West in Denver.

"If [Troopers ISP] lets us consolidate [E-mail] servers, one less box is always better."

Bauer said.

The downside of a centralized server based on IP standards is that users may have to sacrifice client functionality such as integrated calendars and contact managers, Dill said.

FOLLOW THE LEADERS

"Internet service providers are the only ones with rock-solid E-mail, so let's follow their lead," said Jason Erickson, associate consultant at Qualis Consulting Services, Inc., in McLean, Va.

Internet providers often support thousands or hundreds of thousands of users, and their uptime generally is pretty good, Erickson said.

He said Netscape is a logical choice for companies looking for Internet provider-quality E-mail because "they most closely reflect the IP standards."

Users are intrigued by Netscape's latest E-mail offering, but analysts are quick to point out that few users have picked Netscape as their core messaging vendor.

At the end of last year, Netscape had about a million E-mail seats, or about 8% of the market.

"A lot of my corporate clients just aren't interested [in Netscape for messaging], any-

more," said Gary Rowe, a principal at Rapport Communications, Inc., in Atlanta.

Rowe said some users have backed off Netscape for E-mail because some of its messaging products lack key features — an integrated management console, for instance — that large organizations need.

With its latest moves, "I can't tell if [Netscape executives] are brilliant or just pawsing," Rowe said.

But Nina Lytton, president of Open Systems Advisors, a Boston-based consultancy, said, "Netscape is now ready to be considered by big customers, so the fur is really going to fly." □

INSECURITY

What is your top security problem?

Inadequate security policies (for password management, incident response, internal data destruction and physical access):

40%

Nonsecure services (NetBIOS, telnet and FTP access):

25%

Undocumented services (dial-up modem lines, test servers and backup Web servers):

20%

Inadequate data backup policies (infrequent or nonexistent backups, inappropriate backup media and poor data recovery planning):

10%

Outdated software (firewall or operating systems lacking latest updates and patches):

5%

Base: 200 Internet-connected organizations

Percentage of organizations with security flaws that left them vulnerable to rudimentary attacks, even with a firewall:

93%

Base: 200 Internet-connected organizations

Organizations that don't have a policy for preserving evidence for civil or criminal proceedings after an intrusion:

63%

Base: 546 computer security officials
Source: Computer Security Institute, San Francisco FBI, Incorporated

CA announces plans to form services division

CONTINUED FROM PAGE 51

But building a support organization is no laughing matter, analysts and users said.

"Where do they hope to find 2,000 techs to hire this year?" asked Ray Pacut, an analyst at Gartner Group, Inc. in Stamford, Conn. Every other vendor and information systems group is beating the bushes for the same experts, he said.

CA may be more interested in the higher profit margins of the services business than in user's best interests, said Chip Giedman, an analyst at Giga Information Group in Cambridge, Mass. "Vendors can earn two to three times as much from services than from software," Giedman said. But CA's Unicenter management suite requires less integration effort than other management products, and CA support has improved already, he said.

Wang said the support organization will help CA sell Unicenter. Revenue from Unicenter and other client/server software



CA CEO Charles Wang:
The support organization
is "Plan B after the CSC
acquisition didn't work out."

grew 44% this year, "but it could be more if we could deploy faster," he said.

To speed deployment and expand support, CA also is expanding its channel programs for resellers and integrators.

For example, resellers will handle a dozen new stand-alone management products CA is building for workgroups and enterprises. And integrators can offer bundles of hardware, software and services. □

SHORTS

SWAT team for hire

As part of its new global services division, Check Point Software Technologies Ltd. in Redwood City, Calif., is offering to help firewall customers whose networks are under siege. It created an emergency response team it can assign to customers under attack by hackers seeking entry to the network or launching denial-of-service attacks. The team can work remotely or on-site.

Bringing networks to life

NetCracker Technology, Inc. in Waltham, Mass., has shipped a network design tool that does more than draw a picture and document its contents and connections. NetCracker Designer animates traffic flow so network planners can disable links or devices to see the impact and click on a packet to reveal its source, destination and contents. The modeling software runs on Windows 95 and Windows NT and costs \$1,995.

App awareness for Cisco nets

PacketShaper, Inc. in Campbell, Calif., has introduced software for its PacketShaper bandwidth management devices to prioritize traffic flow through routers and switches from Cisco Systems, Inc. By adding Enterprise Software to one of the vendor's PacketShapers, network managers can differentiate among four application access protocols: Java, CORBA, HTTP and DCOM. They then can control performance for those applications by allocating bandwidth to them and protecting them from bursty IP traffic.

New Novell Web site

Novell, Inc. in Provo, Utah, will unveil a Web site with technical white papers, training materials and sales presentations for Novell resellers. The address is www.novell.com/passport.

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NEW PRODUCTS

IBM has announced the International 56K PC Card Modem, a PC notebook modem for international travelers.

According to the Armonk, N.Y.-based company, the modem complies with international standards, so users don't have to change hardware as they change geographies. It supports Europe's Global System for Mobile Communications

telecommunications standard and North America's PCS 1900 mobile phone protocol. The modem costs \$235.

IBM
(914) 765-1900
www.ibm.com/pcc

ODS NETWORKS, INC. has announced CryptoCom Virtual Private Network, a

combination of gateway hardware and client/server software for creating virtual networks.

According to the Richardson, Texas, company, the product was designed for companies that have 10 to 10,000 remote users. It enables secure access to corporate networks over the Internet or other wide-area network technologies. It

was designed to work with existing firewalls and routers and includes password protection, military-grade encryption and automatic key expiration and renewal.

Pricing is \$5,000 for the server for up to 250 users, and \$100 per user for the client software.

ODS Networks
(972) 234-6400
www.ods.com

ARGENT SOFTWARE, INC. has announced Argent Global Alert with Simple Network Management Protocol (SNMP) support, monitoring and alerting software for Windows NT networks.

According to the Torrington, Conn., company, the software monitors performance metrics, event logs and services. When problems occur, it can send notification via E-mail, alphanumeric pager or SNMP traps. Pricing starts at \$9,800 for software to monitor 10 nodes.

Argent Software
(609) 883-6000
www.argentsoftware.com

NETCOM SYSTEMS, INC. has announced SmartBits ML-7710, a hardware and software system for monitoring multilayer Fast Ethernet networks.

According to the Chatsworth, Calif., company, the system tracks Layer 2, Layer 3 and Layer 4 LAN traffic to help users create cost-effective configurations that match service-level agreements. It can monitor packet sequence tracking, latency and latency variation. It was designed for networks with thousands of PC clients and servers operating at up to full 100M bit/sec. wire speeds. The price is \$1,995.

Netcom Systems
(800) 700-0111
www.netcomsystems.com

MOBILE AUTOMATION, INC. has announced RightState, remote management software for users with a growing number of non-networked mobile PCs.

According to the Los Angeles firm, the software lets administrators create a "correct configuration" profile for each PC. Remote client agents programmed with the correct configurations periodically check for changes or errors and send administrator alerts via E-mail when they occur. List price per node is \$175.

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Percentages of companies using or evaluating data mining technology	18%
10 to 99 employees	18%
100 to 999 employees	28%
1,000 or more employees	46%

Based on 810 IT directors or other senior executives at U.S. companies. Source: Information Week Corp., Framingham, Mass.

R/3 adds AS/400

SAP AG last week announced plans to add R/3 Business for business management plus of its R/3 applications suite of third-party products and modules that handle payroll, time billing and check printing. The line will be provided through SAP's major partners. The interface is scheduled to be available by the third quarter. SAP, with U.S. headquarters in Walldorf, Germany, will also introduce a suite of modules involving the interface with American Data Processing, Inc., and five other payroll services firms.

MIS last reported

Compaq Computer, in Hercules, Calif., last week released an upgrade of its HRC/Connect software version 3.0, which includes new modules with any client architecture. It adds support through processes such as electronic procurement.

The HRC/Connect Version 3.0 software runs on micros, servers and PCs without slowing down to run parallel business processes. Functions Pricing starts at \$10,000.

Oracle Database 8i

Oracle Corp. has announced a data warehousing tool designed specifically for PeopleSoft, Inc.'s enterprise resource planning systems. The tool extracts and organizes data from PeopleSoft applications. The tool includes query and reporting tools, relational and multidimensional online analytical processing, and Internet publishing technologies. The base price is \$80,000 per server.

By Craig Stedman

AFTER NEARLY THREE years of trying, Italian footwear maker Bruno Magli's U.S. subsidiary is giving its aging minicomputer applications the boot.

Bruno Magli USA in Carlstadt, N.J., is one of the first companies implementing a new version of SAP AG's R/3 software tailored to the apparel and footwear industries. The Windows NT-based R/3 setup is due to go live in July and will replace financial, ordering, procurement and distribution applications that run in green-screen mode on an IBM AS/400.

The 15-year-old AS/400 applications require large amounts of manual data entry and are having trouble keeping up

with Bruno Magli USA's sales growth and expanding product line, said Peter Gruerich, president of the \$60 million company. The applications also face a big year 2000 problem and don't let executives analyze the performance of individual products.

Gruerich said he expects R/3 to change that. Improved forecasting and automated order allocation, for example, will let Bruno Magli process orders and get shoes out the door to retailers in one day, rather than the three it now takes, he said.

"We want to give [shipping] lists to our warehouse people before the shoes actually arrive [from the factory]," he said.

SAP, page 58



Bruno Magli is among the first companies to use a version of R/3 for the apparel industry



NT 5.0 won't ship in '98; users don't really care

By Sharon Gaudin

CORPORATE USERS said they are getting ready to ride out the wait for Microsoft Corp.'s greatly anticipated release of Windows NT 5.0.

Even though NT 5.0 still lacks an official release date after more than two years on the drawing board, users said they aren't surprised. Actually, they said, they figured the wait into their plans.

"I'd rather wait and have them get it right," said Rick Smith, vice president of systems

at House of Blues Entertainment, Inc. in Hollywood, Calif.

"Just to be on the latest and greatest [release] isn't a business reason to me," Smith said. "Upgrading isn't an easy task, especially when you've got six or eight servers and they're all doing something important in life. I figured I wouldn't see it for a while, anyway."

Microsoft claims that NT 5.0 isn't late because the company never set a release date. But users and analysts said the company touted the upgrade for several years and unofficially talked

about it shipping this year.

Ed Muth, Microsoft's group product manager for Windows NT, two weeks ago said he expects NT 5.0 to ship in the second quarter of 1999. Several users and analysts said Microsoft is going to roll out the second beta at its annual Tech Ed Conference in New Orleans the first week in June. Microsoft wouldn't confirm or deny it.

BEING IS BELIEVING

Michael Wolfe, a senior engineer at Chevron Corp. in San Ramon, Calif., said he has been hearing about NT 5.0 for quite some time, but he isn't figuring it in to his rollout schedule until he sees some product.

"I'll wait," Wolfe said. "I'll look at NT 5.0 when it's real. I'm not going to do anything before then." He also said Chevron is in the middle of an NT 4.0 rollout, putting it on 35,000 desktops and laptops. Chevron wanted an NT 5.0 upgrade and had no intention of waiting for NT 5.0.

Muth said users can expect many new features in NT 5.0, including support for the next generation of microprocessors, both Intel and Alpha; increased memory; improved communications services, which should help connect networks; an active directory, which will put directory information in one place; and Zero Administration. Windows

Windows NT 5.0, page 58

C++ tool 'Builder' of champions

By Howard Millman

FOR THE TWO YEARS since Inprise Corp., formerly known as Borland International, Inc., returned to its roots as a language developer, it has released a series of first-rate application development tools. The company continues that trend with C++Builder Version 3.

C++Builder 3.0, page 58

PRODUCT REVIEW

► C++Builder 3.0

INPRIZE CORP.

Scotts Valley, Calif.
(800) 339-4444
www.inprise.com



PROS: Strong debugging tools, a fast incremental compiler and extensive back-end database connection. Comprehensive online examples for novices.

CONS: Doesn't compile in background. IDE's windows should automatically resize to fill the available space.

Price: Standard, \$99; Professional, \$199; Client/Server, \$3,499.

SAP's R/3 release

CONTINUED FROM PAGE 57

"And we hopefully can react much faster than we have been if we're short on supply or we get a large amount of orders."

But untangling the minicomputer knot has been a long, slow process. The company scrapped a project started in 1995 after 18 futile months of trying to get another vendor's order processing software to work as advertised.

SAP had to make "significant changes" to R/3's basic structure so it could handle the complexity of footwear categorization.

- Jim Shepherd

Advanced Manufacturing

Meanwhile, R/3 and other top application packages couldn't handle the need to categorize apparel and footwear products in multiple dimensions, such as size, color, width and quality of materials.

"Software programs understand color and size, but not width in and they're gone," said Barbara Lefkowitz, merchandise and customer service manager at Bruno Magli USA. "That just pretty much blows everyone out of the water."

KEEPING TRACK

The multiple variables also mushroomed the number of apparel and footwear products that an application needs to track. Magli isn't a big company, but its menu of universal product codes is in the "tens of thou-

sands," Grueterich said. "We swallow them whole."

SAP had to make "significant changes" to R/3's basic structure so it could deal with that complexity, said Jim Shepherd, an analyst at Advanced Manufacturing Research, Inc. in Boston.

VERTICAL PUSH

But SAP is making a big push into vertical markets outside traditional manufacturing. SAP announced the apparel/footwear add-on for R/3 two weeks ago. Besides Bruno Magli USA, other early customers include sneaker and golf shoemaker Reebok International, Inc. in Stoughton, Mass., and jeans maker VF Corp. in Greensboro, N.C.

Bruno Magli USA began implementing R/3 in January and plans to start testing the software this month. The project's cost is approaching \$1 million and could take up to five years to be recouped, Grueterich said. "It's certainly a long-term investment, but I think it's necessary."

R/3 is still missing some features that Bruno Magli USA wants to see, such as the ability for customers to specify deliveries to multiple retail stores on one purchase order, Lefkowitz said.

But she said customer service employees should be able to use R/3 to quickly answer questions from retailers about their orders — a process that can take several hours on the AS/400, where the data has to be printed out and manually keyed in to a spreadsheet.

R/3's user interface also is expected to be easier for new employees to learn, she said. □

Inprise's C++Builder 3.0

CONTINUED FROM PAGE 57

This new C++Builder delivers a variety of intelligent time-savers and performance enhancements.

Chief among those is the ability to fully meet the needs of development shops that require high-level tools (rapid application development and forms-based) for their application designers as well as low-level tools (assembler and application programming interface, or API) for systems developers. Neither Microsoft Corp. nor Sybase, Inc. offers a comparable dual-level development environment.

I tested the client/server version.

Inprise also offers Standard and Professional versions. The Standard edition lacks class libraries and advanced development tools, so it is suitable only for novices. The Professional version lacks SQL and database connectivity features but is fine for individual programmers.

Other key enhancements include an advanced project manager, greater scalability, advanced debugging tools and improved database development capabilities.

FASTER COMPILING

Version 3's incremental compiler runs about 50% faster than the one in Version 1 (Inprise bypassed Version 2). In my informal tests, Version 3's compiler also outpaced Microsoft's Visual C++ 4.0, typically running 20% to 25% faster. But C++Builder doesn't compile in the background, as does Microsoft's Visual C++.

C++Builder's advanced debugger previously sold separately as the Turbo Debugger.

has been improved, so developers can optimize their programs and improve their productivity.

To accelerate low-level debugging, C++Builder's integrated development environment (IDE) provides three convenient tools: Debug Inspector, CPU View and Module View.

For high-level debugging, the IDE provides event logs, data-watch breakpoints, local variable inspection, Dynamic Link Library debugging and ActiveX debugging. One thoughtful time-saver provides the value of an expression as you run your mouse pointer over it.

Developers who want direct API access or prefer to write low-level code, such as their own device drivers, can use the TurboAssembler feature. To ease navigation between the TurboAssembler code and high-level code, C++Builder synchronizes its editor and forms designer.



C++Builder now also helps accelerate development of intranet/Internet applications

Other significant new features in Version 3 include migration tools to help load existing C++, Microsoft Foundation Classes, Microsoft's Visual C++ and Object Windows Library applications.

C++Builder now also helps accelerate development of intranet/Internet applications and aids decision-support analysis. It also provides active templates so you don't have to build all modules from scratch.

The extensive use of wizards, samples and templates helps compensate for C++Builder's meager online help. That particularly benefits novices. All versions ship with printed manuals.

Additional shortcuts include more than 70 ready-to-use Internet components that can make the construction of dedicated applications such as mail servers, event dispatchers and newsgroup readers easier.

The ActiveForms Wizard guides you through the creation and setup of Web-deployed ap-

plications. You build an active form just as you would any C++ application by dropping components onto the form designer; C++Builder then automatically creates the associated Hypertext Markup Language code. You then can debug your application from within Microsoft Internet Explorer, which is included.

The former Borland appears to have watched and carefully listened to C++ developers since it released Version 1

The Business Insight tool lets the developer perform multi-dimensional analysis of data and graph, chart, and generate reports, perhaps avoiding the cost of a full decision-support system.

SHARING AND EASE

The hierarchical project manager lets developers compile projects to multiple targets — including .exe, .lib, .res and .dil files — thereby greatly enhancing the development team's ability to share code.

To ease database connectivity chores, C++Builder creates database relationships in a central location and browses live data in the design mode. You select the fields, and C++Builder instantly builds all the connections to a live database, saving hours of programming and testing time. The component palette has more than 25 components for data access and display.

C++Builder provides a variety of tools to ease the management of SQL queries. For example, SQLBuilder allows developers to create and execute SQL queries without having to know SQL syntax.

Inprise appears to have watched and carefully listened to C++ developers since it released Version 1 a little more than a year ago. In this all-in-one development environment, the company delivers everything they asked for. □

Windows NT 5.0 delays

CONTINUED FROM PAGE 57

technology to remotely manage Windows systems.

Joe Barkan, a research director at Stamford, Conn.-based Gartner Group, Inc., said some users remain hopeful that Microsoft will get NT 5.0 out late this year. But that is no longer realistic he said.

Barkan also said most companies won't go with an upgrade until NT 5.0 has a few service packs with bug fixes and feature additions under its belt. So if

NT 5.0 does come out next year in the second quarter, that puts the release of service packs well toward, if not into, 2000 because it takes about six months to get a service pack out.

Barkan said a few months' difference won't really matter because during the next year and a half most information systems managers will be more focused on fixing year 2000 problems than on upgrading to NT 5.0.

Lyle Anderson, chief information officer at News America Publishing Group in New York, agreed with Barkan.

Anderson said he will think toward NT 5.0 after he has finished focusing on getting past the millennium.

"I don't care if it's late," Anderson said. "It's a complicated product, and I'll be pleasantly surprised if it makes [the second quarter of 1999]. If it came out this year, we wouldn't migrate to it anymore because of the year 2000 problem. I don't think many corporations will be making many migrations in '98 or '99." □

Millman operates Data System Service Group, LLC, a networking consultancy in Croton, N.Y. He can be reached at (914) 274-6883 or kmillman@ibm.net.

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Briefs

TELECOMMUTING INDEX

People who telecommute regularly (on the road more than seven days per month or work from home more than three days per month): **8.2M**

Telecommuters who say their employers don't provide ergonomic support to prevent injury: **59%**

Companies that inspect or require photos of employees' telecommuting workspaces: **6%**

Employers that don't provide formal training or materials to help employees telecommute: **63%**

Employers that don't pay for telecommuting tools: **44%**

Employers that paid for computer accessories used at home: **29%**

Base: 123 telecommuters

Source: Update Research Corp., Mountain View, Calif.

Computer price cuts

Computer Computer Corp., hoping to cut some of its inventory overload, has cut prices by as much as 50% on some Pentium and Power-Lock products. The largest reduction, a 50% cut, was on the new-400-MHz Pentium 500. The price of the 400-MHz server was cut from \$995 to \$4,495.

Cloud computing

Windows of Colorado, USA, recently announced that it has built a supercomputer that can do 100 billion calculations per second. The machine, which is based on a 100-node cluster of 400-MHz Pentium PCs, is designed to handle complex calculations for the oil and gas industry. The company also has announced a new software product called "Cloud Computing," which is designed to help companies manage their data and applications across multiple platforms and locations.

Thin clients move into retail world

Users save money at checkout, in back office

By April Jacobs

NETWORK COMPUTERS are making their way into some of the largest retail environments in the country, serving as point-of-sale machines and back-office computers.

Observers said thin-client devices, such as IBM's Network

Benefits of thin clients in a retail environment:

- Cheaper to own than PCs
- Training costs are lower
- Software/hardware easier to implement

Stations, are easier to use than traditional green screens and cost less than PCs.

"[Network computers] are a pretty good application for the retail environment because the data being generated is small."

said Roger Kay, an analyst at Framingham, Mass.-based International Data Corp. "For example, with an individual grocery item, you are talking small numbers of bytes per transaction, so what you have in terms of traffic are a large number of low-density items contend for the network, which is fine. This is the old terminal argument to a great degree, because the only moving parts are the keyboard and the mouse."

GOOD EXPERIENCE
At Montgomery Ward & Co. in Chicago, results from a pilot test of several Network Stations have produced a good business case for installing them, said Chief Information Officer Don Bernheisel.

The company probably will roll out about 3,000 of the stations but hasn't reached a final decision on them, he said.

The Network Stations would replace old 386- and 486-based

PCs. Bernheisel said he could use the machines, which cost about \$1,000 each, at checkout counters or in administrative offices.

The company would use MicroSoft Corp.'s Windows Terminal Server, a multiuser version of the Windows NT operating systems, to run Windows-based

applications. "We believe these are going to be easier to support than PCs," Bernheisel said.

He said the thin clients won't have the local support headaches desktops do, because the hardware is simpler and software is run on the server. That makes it easier to upgrade and This clients, page 62

NT rollouts spike need for storage management tools

Administrators seek centralized control

By Nancy Dillon

AS COMPANIES EMBARK on rapid Windows NT server rollouts, NT administrators are demanding more tools to centrally manage distributed storage resources.

"With NT, it's like we're back in the '60s," said user Dan McDonald, referring to the fact that NT Server 4.0 lacks the basic ability to set quotas on how much storage users can use.

NT 5.0, due by the middle of next year, will offer some relief (see related story, page 57).

But analysts said feature-rich third-party tools will still be in demand.

"Right now, we just throw more storage at an NT server whenever needs come up," said McDonald, director of computer services at Alaska Air Group, Inc., in Seattle. "This solves growing storage needs, but it certainly doesn't add to the stability of the growing network."

McDonald said his 140 NT servers haven't had any storage problems yet, but some are getting close. He is evaluating tools (see related story, page 57).

MANAGING STORAGE RESOURCES

SAMS: Vantage for Distributed Platforms 4.2

Sharing Software

- Can create highly customized reports
- Can monitor NT, NetWare, Unix, OS/2 and MVS storage
- Highly scalable
- Web-based management interface
- Can report on disk errors
- No Web administration console until 1999
- Doesn't report on disk errors
- NT only
- One SRM server can support up to 50 monitored clients
- \$7,000 for server and \$400 per managed client
- \$995 for management server and \$399 per managed client

Both products offer scan automation, quota management, file statistics, and usage and trend reports. Both can provide threshold alerts via E-mail, the NT event log or SNMP framework.

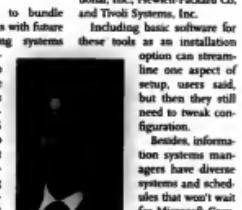
Users try outsourcing to make PCs management-ready

Also await bundling of Microsoft, other agents

By Patrick Draven

EMERGING PLANS to bundle management agents with future Windows operating systems (CW, May 4) promise a little help bringing these servers and stations under central control. But some IT groups want help sooner. And that has meant two options: outsourcing systems preparation or hoping for auto-load capability in new PCs.

QUICKER ROLLOUT
The goal of the planned bundles is to speed the rollout of systems that can interact with enterprise-wide management tools from vendors such as



Exodus' Prelaunch
Subscription wants to receive ready-to-manage servers

said Prabhakar Sundararajan, director of Internet applications at Exodus Communications, Inc., Santa Clara, Calif.

PC Management, page 62

NT rollouts spike need for storage tools

CONTINUED FROM PAGE 61

to deal a preemptive strike.

One new tool is Storage Resource Manager (SRM) 2.0 for NT from Boston, Mass.-based HighGround Systems, Inc.

The resource-mapping application, which was announced last week, has a centralized Web-based management console and helps NT administrators determine how much space is being used per server or per user, where the network bottlenecks are, which aging files can be deleted, and which disks are the most prone to failure.

Version 2.0 adds support for Alpha-based servers, alerts via E-mail or Simple Network Management Protocol traps and group-based monitoring.

OTHER OFFERINGS

Similar products on the high end include SAMS Vantage for Distributed Platforms from Sterling Software, Inc. in Rancho Cordova, Calif. (see chart, previous page).

On the low end are single-function utilities such as Quota Manager from NTP Software in

Bedford, N.H., and Quota Advisor from W. Quanta Associates, Inc. in Boston, Va.

Donald Couture, LAN administrator at Copyright Clearance Center, Inc. in Danvers, Mass., said SRM saves his company about \$10,000 a year in disk management costs.

He said before he started using the software, he would spend five hours per week manually checking directories and disk health in his five NT servers.

"Not only do I not have to manually check servers anymore, but I don't even have to check the event log. If there's a problem with my users or disks, the system E-mails me," Couture said.

His one complaint is that SRM's management console is exclusively Web-based.

Users are outsourcing their PC management

CONTINUED FROM PAGE 61

Exodus hosts customers' ever-growing Internet business presence with servers in five data centers, all centrally managed via CA's Unicenter TNG suite.

"It would help us if servers came to us enabled with Unicenter TNG," Sundarajan said.

Fortunately, such help is becoming more available.

For example, CA and Compaq Computer Corp. recently launched a program to support custom preconfiguration services through service organizations such as CompuCom Systems, Inc. and Vanstar Corp.

task over to someone else is the way to go," said Kathleen McNulty, manager of core systems at Xerox Corp. in Rochester, N.Y. "We define it and let Electronic Data Systems Corp. build it," she said.

Now Xerox receives all PCs prepped with agents for CA's Unicenter TNG so they can be managed promptly by EDS, McNulty said.

The initial rollout of this management infrastructure to 40,000 machines took eight weeks, said Walt Stachura, a senior infrastructure specialist at EDS.

As an alternative to outsourcing and channel preconfiguration, automated setup is on the way. PC vendors are adopting the Wired for Management specification they developed with Intel Corp.

Part of that specification calls for a new step in the boot process. When such systems start up on a network, they automatically scan for a management gateway or server. Then they download designated software, ranging from an entire operating system to agents and new or upgraded applications.

TO ERR IS HUMAN

This step can do more than speed software deployment. "It also can eliminate human error," said Martin Heath, senior vice president of product development at ThruNet.

"Preloading services offer more value to 15 groups that partnerships to distribute limited samples of management tools," said Paul Mason, an analyst at International Data Corp. in Framingham, Mass.

"Preloading services offer more value to 15 groups that partnerships to distribute limited samples of management tools."

— Paul Mason,
International Data Corp.

Like Compaq, Dell Computer Corp. announced plans to offer CA's Unicenter TNG Framework — a subset of the full management suite — to interested customers.

But perhaps more beneficial is Dell's current service for loading and preconfiguring management software from CA, HP, Tivoli and other vendors.

"Preloading services offer more value to 15 groups that partnerships to distribute limited samples of management tools," said Paul Mason, an analyst at International Data Corp. in Framingham, Mass.

Turning the tedious setup

Chips are targeted at sub-\$1,000 PCs

By Terhi Uimonen

TAIWAN'S CORE LOGIC vendor Silicon Integrated Systems Corp. (SIS) last week introduced two low-cost chip sets designed for sub-\$1,000 desktop PCs powered by Intel Corp.'s Pentium II or Celeron processors.

The two Pentium II-class SIS chip sets — available in sample quantities now, with volume production scheduled for June — cost significantly less than comparable Intel offerings, said Samson Liu, president and CEO of the Hsinchu, Taiwan-based company. SIS has consulted a U.S. law firm to ensure that the devices don't infringe on any Intel patents, he added.

Intel to date has claimed that it won't license its so-called P6 bus technology to competitors, effectively trying to lock them out of the Pentium II market.

The company also has said it will vigorously defend its intellectual property rights.

But SIS has done its homework on the matter, Liu said. It is so confident it hasn't infringed on any Intel patents that it will send all relevant materials to Intel for reference, he said.

At least two other vendors also are expected to ship Pentium II-class chip sets later this year. Integrating a feature set comparable to Intel's latest Pentium II core logic, SIS's two-piece chip set can support systems with speeds up to 100 MHz, but it costs only \$39 in quantities of 10,000 units, Liu said.

Intel's latest chip set, meanwhile, costs \$75.50 in 10,000-unit volumes, said Intel officials here last month. □

Uimonen writes for the IDG News Service in Taipei.

If HighGround can get [on] Unix, I'll jump on it. Half the world is still Unix and that won't change.

- Michael Zanga,
Greenwich Capital Markets

"Our servers didn't need Web browsers loaded before we started using this software," he said. "I would have liked another console option."

GOTTA HAVE THE WEB

But Michael Zanga, a senior NT engineer at Greenwich Capital Markets, an investment banking firm in Greenwich, Conn., said,

"If something doesn't have a Web-based front end, forget it. I won't use it," he said.

Zanga said he is using SRS to help with capacity planning as it migrates a NetWare-based network to 40 NT servers.

Zanga said he considers the software's restrictions to its biggest problem.

"If HighGround can get [on] Unix, I'll jump on it," Zanga said. "Half the world is still Unix, and that won't change soon."

HighGround officials said Unix agents are due to appear later this year and into next year. □

Thin clients go retail

CONTINUED FROM PAGE 61

maintain. Network Stations would give terminal users at Value City Furniture in Columbus, Ohio, a friendlier graphical user interface than their green-screen terminals, said company CEO Jerry Kerr.

Users also would get access to Lotus Notes and Domino, which the company plans to implement along with a corporate

internet for internal communications, Kerr said.

"We want to give users a system that is easier to learn and use," said Kerr, noting that training is an area in which the company hopes to cut costs.

Kerr also said he hopes Network Stations, which are installed in one-third of the company's locations, save on support costs. The company plans to roll out 1,000 of the machines, he said.

"Maintenance makes it a lot more expensive to have PCs out there," he said. □

NEW PRODUCTS

NEOSTATION SYSTEMS, INC. has announced Neostation 200 Pro, a thin-client computer.

According to the King of Prussia, Pa., company, the Neostation 200 system is a Windows terminal that operates with a multiuser Windows NT server, such as Microsoft Corp.'s Windows Terminal Server or Citrix Systems, Inc.'s WinFrame.

The Neostation 200 Pro includes support for audio and additional memory.

Pricing for the product starts at \$699 for a system with audio and 32M bytes of RAM.

Neoware Systems

(610) 277-8300
www.neoware.com

BIOCARE COMMUNICATIONS SYSTEMS, INC. has announced the eight-port Fibre Channel SilkWorm Express switch.

According to the San Jose, Calif., company, the switch was designed for entry-level storage area networks.

It provides full-duplex gigabit speeds from each port and allows direct attachment to servers or storage devices.

The SilkWorm Express switch costs \$16,000, Brocade Communications (408) 470-8000
www.brocade.com



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Managing

ANATOMY of a MEGA-

The announcements hit with virtually no fanfare. BellSouth Telecommunications would outsource its IT efforts to Electronic Data Systems Corp. and Andersen Consulting.

The oh-so-small news blurbs offered little information. For 10 years, EDS would have prime responsibility for building and running BellSouth's information technology operations, and Andersen would be responsible for BellSouth's application development. EDS would take over 1,200 employees, six data centers, 4,000 midrange systems and 50,000 desktop PCs. Andersen would assume the fate of 900 BellSouth employees to "handle customer care, billing, marketing and finance" applications. BellSouth refused to disclose terms of the deals.

But the drab little announcements by BellSouth Telecommunications — the largest subsidiary of Atlanta-based BellSouth Corp. — hid the fact that as of Jan. 1, it had joined the likes of Du Pont Co., Swiss Bank and J. P. Morgan & Co. in the rarefied, enormously complicated realm of the IT megadeal. Industry wags had pegged the total cost at a whopping \$5 billion.

"Today's outsourcing deals can be more complex than an acquisition or a divestiture," says Dennis McGuire, president of Technology Partners, Inc. (TPI) in Houston, which has helped BellSouth, Du Pont, J. P. Morgan and

others decide whether to outsource, how and to whom. "We touch all of the same issues, including taxes, pension plans and investor relations. Plus, we have to develop a long-term services contract."

Small wonder, then, that a cast of hundreds — consultants, attorneys and myriad company employees — plays a part in those megadeals.

Here's a detailed account of the work that went on behind the scenes when BellSouth chose Andersen and EDS.

WHO'S ON FIRST?

Outsourcing was just an option in August 1996, when Rick Harder, chief information officer at BellSouth, convinced his boss that it was time to transform the company's approach to running IT. The notion: Despite BellSouth's IT prowess, telecommunications' deregulating landscape would force the company to invest differently in both people and technology. One month later, Harder chose Bill Cangialosi to lead the project exploring the shape of things to come.

"We did not go into the initial phases saying we were going to outsource," says Cangialosi, chief financial officer for IT at BellSouth Telecommunications. But the concept was worth reviewing, he says. Involved in that effort was a core project team of nearly 20 people, which included executives from corporate human resources, legal, communications, purchasing, process management, audit/security and representatives from each functional area of IT. "Those were people who knew IT from the ground

THE PAPER AND INK USED IN THE ORIGINAL PUBLICATION MAY AFFECT THE QUALITY OF THE MICROFORM EDITION.

BellSouth's huge 10-year outsourcing pact with EDS and Andersen took intense planning, hard work and a cast of hundreds

DEAL

BY ROCHELLE GARNER

up," Cangelosi says. Inside and outside legal counsel were involved, too.

A pecking order was established: An executive, with day-to-day responsibilities for the project, would report to Cangelosi. Cangelosi reported to Harder. Above that core project team was an executive steering committee composed of BellSouth Corp.'s president, its chief financial officer, all senior leadership at BellSouth Telecommunications and several business unit officers.

"We established checkpoints to go back to that committee and say 'Here's where we stand,' and to offer our recommendations about whether to go for-ward or not," Cangelosi says.

For many companies, the next step is to call in an outsourcing consultant, whose specialties include helping customers determine whether, and how, to outsource. "After going through the initial evaluation process, about 30% of the companies that come to us decide not to outsource," McGuire says. "That's higher than it sounds because customers that come to us already have some predisposition to outsource."

Clearly, that evaluation effort determines what lies ahead. The first topic to assess is your organization's IT capabilities by analyzing app metrics as total cost of ownership, help desk response time, customer satisfaction, software defect rates, staff retention, and on and on. It's a six- to eight-week process

"We had 100 people inputting metrics, collecting data and making sure we understand what we do," says Patrick Fortune, corporate vice president and CIO at St. Louis-based Monsanto Co., which last year signed a 10-year outsourcing contract with IBM Global Systems. "Before you can appropriately look at outsourcing, you have to have a valid comparison of what you're achieving now vs. what you want to get."

The next step? Create a request for information (RFI). McGuire says. Not familiar with the term? In TPI's process (see box at right), that fairly detailed document lists the so or so key things a supplier absolutely must do. The RFI should give vendors a sense of whether they want to continue down the expensive road of responding to a forthcoming request for proposals (RFP). After sending out its RFI, BellSouth asked each of the six or seven vendors to respond to certain areas, such as operations or solutions. "It gives us a sense of how candid they are," McGuire says.

PROJECT SCOPE

BellSouth's IT folks examined their own IT organization to the nth degree and laid it all out in the RFP, which extends beyond the information request to spell out the size and scope of what would be outsourced.

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TPI'S SOURCING EVALUATION PROCESS

(also used by BellSouth)

Phase 1: Assessment. Conduct the internal assessment, document the objectives, evaluate service levels and metrics, distribute a hybrid request for information, develop a multiyear financial model and develop the request for proposals (RFP).

— Management checkpoint

Phase 2: Develop a short list. Select initial vendors, distribute the RFP to at least three vendors, evaluate and select the two best proposals.

— Management checkpoint

Phase 3: Vendor selection. Define requirements, complete due diligence, complete detailed human resources evaluations, conduct detailed negotiations, define contract management structure and staffing, and select best vendor for contract negotiations.

— Management checkpoint

Phase 4: Contract negotiations. Develop the contract and complete all preimplementation activities.

Source: Technology Partners Inc., Houston

toured our facilities to see if we had what we said we did."

As the final selection drew near, more BellSouth people pored over those proposals to assess every possible ramifications. "These are very confidential issues, so only a very few of us knew all of the details," Cangelosi says. "We had subject matter experts apply on their individual pieces — like state taxes, federal tax issues and auditing — with the lead team constantly pulling that kind of information into a picture that makes sense. This is the sort of sensitive information that really should be compartmentalized on a need-to-know basis."

Eventually, up to 500 BellSouth people were involved in conducting due diligence, examining tax ramifications, human resources concerns and a raft of other business issues.

At last, a decision was made: EDS would oversee operations at BellSouth Telecommunications, and Andersen would handle application development. It was time to negotiate the contract.

These are the times that truly try men's souls. Delaware-based DuPont, for example, went so far as to rent off its mega-deal, page 66

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Picture it: A 5-in.-thick three-ring binder accompanied by 22 equal-size binders of addenda, covering BellSouth's computing assets, staffing skills and financial expectations.

"This is not something you can do on a wing and a prayer," Cangelosi says. "You have to share with vendors the number of data centers, your midrange computers, PCs, help desk positions, the skills sets that people possess; the contracts you have with other vendors and a host of things that indicate the size and scope of what you are thinking about outsourcing."

And yes, people actually read that stuff. With billions of dollars on the line, no one can afford to get lazy. "Once companies have put together their RFP, they have in their hands a really good look at the organization," McGuire says. "That's when it's time to review everything with the major steering committee. And then we decide whether to distribute the RFP to three or four vendors, with the idea of narrowing it down to two for final consideration."

BellSouth, which wanted to distinguish between outsourced operations and outsourced application development, ended up distributing the RFP to four candidates (two for each contract). After the responses came in, things really looked into gear. "We inspected their proposed solutions, looked at their teams, looked at their technology and reviewed their references by visiting with and talking to their customers," Cangelosi says. "At the same time, those vendors went through our data and

TPI'S SOURCING EVALUATION PROCESS

(also used by BellSouth)

BellSouth Telecommunications followed this four-phase process — plus reviews — to develop an outsourcing plan and select vendors:

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Mega-deal, page 56

ANATOMY of a MEGA-DEAL

CONTINUED FROM PAGE A1

lives in New York, where, for a month, its core project team and soon-to-be partners worked double shifts every day, weekend included — except for Mother's Day.

BellSouth's team went through double shifts, too. The team worked to spell out, with no ambiguity, the financial terms, expectations and deliverables that EDS and Andersen would provide.

BellSouth won't disclose those terms. But it probably followed the advice of its legal counsel, Milbank, Tweed, Hadley & McCloy in New York.

Take, for example, the all-important consideration of pricing. "Most companies don't understand the actual way work is priced," says Daniel Mummary, a partner at the law firm. "For instance, it's typical to value a baseline level of service at a fixed price, then pay more as you go over it in volume. But too many companies assume that certain kinds of service are included in that baseline when it's not spelled out. And if it's not spelled out, it's a separate price. Another mistake is misinterpreting what 'fixed price' means. It doesn't mean a ceiling, it's a fixed price for a particular component of service."

Another mistake, Mummary says, is spending too little time defining technology evolution. "It's important that contracts distinguish between technological evolutions and complete right-turns," Mummary says. "Evolution might be included in the price. That's a technical discussion, and it's in the vendor's interest to make that very gray."

Finally, after nearly 18 months, BellSouth signed the contracts. They commit EDS and Andersen to keeping BellSouth's IT operations and application development capabilities among the best in its industry. The vendors must benchmark their performance against other telecommunications players and invest in technology and technical skills to ensure BellSouth's best-in-class standing.

For its part, Andersen must achieve at least the fourth level of the five-level Capability Maturity Model. The term is defined by the Software Engineering Institute at Carnegie Mellon University. Level four is the Managed Level and uses a rigorous measurement program to anticipate where an organization needs to change. The Optimizing Level is the highest level. It represents that nirvana where organizations prevent defects even as their technologies and management processes constantly evolve.

BellSouth created what it calls a three-tier structure for managing its complex relationships.

The top tier, called the "control tower," manages daily workflow among BellSouth and its two new partners. The middle tier, BellSouth's contract management organization, monitors EDS's and Andersen's compliance, measures their performance, analyzes usage data and determines whether the need arises to modify the contracts. The third tier is alliance management, led by Harder. It's his job to meet with his counterparts at EDS and Andersen and generally smooth out any contentious issues that could impede BellSouth's alliance with either partner.

It's too early to judge BellSouth's success, but one thing is certain: If something goes wrong, it won't be for lack of attention. "God is in the details," Cangelosi says.

Corner is a freelance writer in San Carlos, Calif.

R SOURCES: FOR IS MANAGERS

BOOKSHELF

INSOURCING AFTER THE OUTSOURCING: HIS SURVIVAL GUIDE

By Robert B. Chapman, and Kathleen R. Andrade
AMACOM Books, New York: 224 pages; \$39.95
(hardcover)

A more appropriate title for this book would be "Is Outsourcing the Right Move?" with the subtitle: "And if it Wasn't, We'll Tell You How to Get Out of It."

Chapman and Andrade provide valuable advice on how a company can take the information systems function back from an outsourcing — once you get past more than 50 pages on how an outsourcing arrangement can outcome in usefulness. The authors devote a chapter to how IS managers who oversee an outsourcing can build the best possible case to reclaim control of the IS function. That, Chapman and Andrade contend, is the hardest test IS managers can encounter.

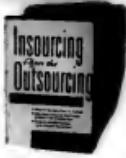
Why? It comes down to perception. If upper management sees IS as a cost center rather than a

source of strategic value, IS managers have a tougher job to sell the higher-ups on insourcing. If both sides are on the same page regarding IS value, IS managers must painstakingly craft a tactical strategy detailing what the newly insourced organization will look like and how it will function.

The authors show how an outsourcing arrangement can work and how a client should help the arrangement work.

But the last chapter, Protecting Against Outsourcing, can be perceived as a rallying cry for IS managers who want to keep the barbarians at the gate. Even if those managers' IS organizations lack proficiency in managing themselves, measuring their performance and proving to their companies that IS provides strategic value.

— Rick Saita



JARGON JUDGE

BY ANNE McCROBB

"Solution"

■ It was a stroke of marketing brilliance. On the first day, a vendor proclaimed its product a "solution," and forevermore did all the other vendors follow suit.

After all, what were their computers, applications, development environments and so on, if not the be-all and end-all for users? Whatever the vendor made, it would solve a user's problem — or all of a user's problems, or problems a user didn't even know it had yet, or meet business needs before they became problems.

Before long, of course, salespeople and marketers ran amok with the term. "Solution" became flippant marketing, bellying the complexity of the technology underneath it and confounding purchaser and user over what exactly the products did and didn't do.

Not that it bothered the product pushers. Even if they didn't truly expect their "solution" to solve all user problems, they did assume that someone else would figure out exactly how the product worked or what it was supposed to do. In marketing, such wishful thinking is often the point.

You'd think we'd be insulted by supposedly technocavvy vendors belittling our intelligence by calling everything they make a solution instead of what it really is. Instead, I see many of us using the term ourselves, almost in self-defense.

It's easier to tell management we want an end-to-end electronic-commerce solution than to explain how we need software that will let orders from a company's Web site go into our ac-

counting and inventory systems, and how that works. It's easier, but it isn't smarter. We miss an opportunity to explain precisely what needs to be done, and thereby miss the opportunity to educate and build alliances with colleagues throughout the business.

By flinging around the word "solution," we forget that what the vendor is selling isn't really a solution anyway — only a tool. Get stuck on solution, and you risk getting stuck with a system that doesn't meet your company's needs, or requires all sorts of additional stuff to do. If you doubt that, wait until you have to call for customer service or support. All of a sudden, that system doesn't look very end-to-end, much less like a solution.

So call it a product or a system or explain what it is in whatever depth your audience can handle. After all, as they say, anything that isn't part of the solution is part of the problem. Best that it not be you.



Enterprise management doesn't
have to be a leap of faith.



Most worthy leaders don't talk only about destinations. They also explain how to overcome obstacles along the way. Microsoft still has a lot of explaining to do.

PAUL A. STRASSMANN

BOULDERS ON THE ROAD AHEAD



Bill Gates staked out his vision of the decades ahead in his 1995 manifesto, *The Road Ahead*.

Since then, we've been exposed to Gates' vision through his speeches and Microsoft's advertising campaigns, such as the recent series about delivering a Digital Nervous System that will make information systems "work together." We've also heard the promise of Zero Administration costs for PC software.

None of those marketing initiatives, based on my close following of news from Redmond, alters the view of the future as it was articulated in Gates' book.

So more than two years after *The Road Ahead* was published, how does Microsoft propose to remove the boulders blocking the information superhighway and impeding global computing in the Information Age?

A BOULDER ON THE ROAD: INTEROPERABILITY

The Holy Grail of computerdom is the achievement of interoperability. It means not having to worry how data, applications and hardware will work as technology changes. Everyone—including readers of *The Road Ahead*—has run into problems with incompatible text, data, images and peripherals. The CD-ROM that came with Gates' book ran on Windows 95, but not Windows NT.

Today, we're still wondering how Microsoft will deliver on the book's promise that "... Microsoft operating systems provide compatibility and interoperability ... developers do not need to worry about what PC their software will run."

Today, Microsoft isn't fully interoperable even within its own product line and certainly doesn't practice easy handshakes with software and hardware vendors who don't strictly and narrowly comply with Microsoft's formats.

How those barriers will be removed is something that concerns every systems manager. We're still waiting for a cogent plan — other than homogenizing everyone into a mold set by one supplier and setting proprietary standards of interoperability for everyone else.

ANOTHER BOULDER ON THE ROAD: POWER

Meanwhile, Microsoft's ambitions and aggressive methods have caused widespread apprehensions. The paranoia of software companies, antitrust lawyers and state regulators has spread throughout corporate America. A story in the April 7 issue of *Fortune* carries the headline: "Microsoft: Is your company its next meal? Now even the giants of the Fortune 500 have reasons to fear."

Simple arithmetic peoples those anxieties. To maintain current growth and financial performance, Microsoft's profits must rise to about one-third of all profits earned by the 3,000 largest U.S. corporations. If that happens, Microsoft's revenue would equal three-quarters of the combined global revenues of GM, Ford, Chrysler, Honda and Toyota.

But size and the cash in Microsoft's war chest aren't the only sources of fears. CEOs finally have realized that Microsoft's operating system straddles every access gate to their information networks.

It's as if a single locksmith provided both the keys and the locks for every door in the world.

The Road Ahead avoids the issue altogether. I did a full-text search in the book for words such as "monopoly," "obstacles" and "dominance" and found one reference to the game of Monopoly, one to the late An Wang and electronic calculators and two references to telephone company monopolies.

Meanwhile, Microsoft continues to deny that it's exhibiting any monopolistic tendencies, as evidenced in recent Senate hearings.

The only obstructions to creating the information society mentioned in the book are the bandwidth barriers put in place by telephone and cable companies. Those themes continue to be repeated in most of Gates' recent talks and are supported with an aggressive investment and acquisition agenda in cable companies and satellite ventures.

To me, talking about bandwidth barriers instead of addressing the acute issues around Microsoft's dominance in operating systems and desk-



The Road Ahead may look unimpressive on the book jacket, but Bill Gates and Microsoft have some obstacles to clear from the information highway

top applications looks like a signal that Microsoft wants to extend its reach. Redmond doesn't just want to supply the keys and locks for the world's computers. It also wants to manage the electronic pathways leading to them. No wonder such aspirations tend to increase suspicions about an organization that with much power.

Microsoft's visions about the road ahead must now respond to rising concerns over whether its claims to leadership will expose its followers to unanticipated risks.

ADVICE TO TRAVELERS ON THE ROAD AHEAD

Microsoft is an admirable organization. It has delivered universal solutions that have made it possible to extend computing power beyond the limits and imagination of companies that initially possessed greater resources and superior technologies. Its success has been well-earned because it has consistently delivered good value, compared with what competitors offered.

But nothing dominates forever, as I found out after years of committing my companies to follow the computing path as preached and delivered by IBM. IBM failed to recognize that its chosen "road ahead" didn't lead where its customers wanted to go.

One should remain skeptical about Bill Gates' vision until he and his associates tell us how they propose to cope with the obstacles to their idealistic-sounding visions. □

Strassmann (paul@strassmann.com) used Microsoft software to write this column, though he diversifies his applications with an eye toward interoperability.

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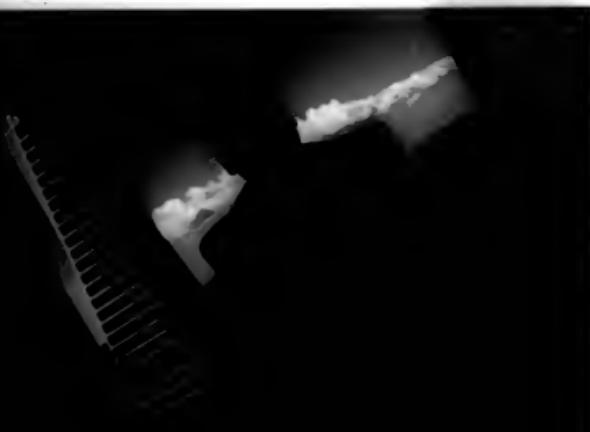
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MANAGING TECHNOLOGY IN THE FACE OF CHANGE

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In Depth



OLD-GUARD UTILITIES SWAP THEIR SYSTEMS AS THE UPS AS THE

IT'S MONDAY MORNING. More than 200 wet-behind-the-ears sales representatives for PG&E Energy Services are on the road hard-selling natural gas, billing and metering services, efficiency evaluations and voltage upgrades to businesses and consumers.

A sign of the times.

On March 31, California deregulated energy sales, releasing 27 million consumers from the iron grip of the state's three largest utilities.

As a result, California utilities are grappling with two major changes to their business models. First, regulated utilities can't compete with 300 energy start-ups registered by the California Public Utilities Commission (PUC) to service lucrative business accounts.

So to play on the new, deregulated field, those utilities have spun off deregulated subsidiaries of their own.

The utilities themselves are moving in another direction. Whether they like it or not, their role is changing. No longer one-stop energy miners, deliverers and service providers, utilities must become delivery and switching facilities for consumers and new marketers.

From a technology standpoint, adapting to those changes hasn't been easy. Especially because the PUC gave utilities, encumbered as they are with bureaucratic red tape, only four months to make the changes.

These utilities will have to reinvent themselves and their IT departments, says Jack Ellis, executive vice president at Automated Power Exchange, Inc. in Los Altos, Calif. "Huge systems have had to be built very quickly and at great expense."

Things aren't as dire as they may first appear for the old-guard utilities. They continue to get a big piece of the pie until 2002 in the form of an energy-delivery surcharge that amounts to 40% of every energy bill. That gift from the PUC is intended to help offset the utilities' switchover costs.

But the utilities risk losing lucrative customerservice value-adds to out-of-state conglomerates such as Houston-based Enron, Inc. and its old spin-off division, Enron Energy Services, or to start-up niche marketers such as Green Mountain Energy Resources LLC in San Francisco.

THE UTILITIES

The future success of those new combatants hinges on their information systems departments, which, in a very short time, have built systems to support entirely new and fluxing business processes.

Steve McMenamin, division vice president of

The Deregulation Shuffle

BY DEBORAH RADCLIFFE

UTILITIES FURIOUSLY REVAMP TO FEND OFF HUNGRY START-INDUSTRY GETS COMPETITIVE

Customer services at Southern California Edison, says, "We've had to make approximately 100 major business process changes since November. The time frame is driving virtually our entire process."

To prepare for a more complex and fluid customer base, Southern California Edison's IS department is modifying its system to support customer switchovers and use-monitoring, and to network new retailers.

Because billing and other services are now unbundled, Southern California Edison's new system must support several new variables. For example, customers may buy energy or metering from a new retailer but still want the utility to handle billing. "The dimensions have five variables from business to business and from house to house," McMenamin says.

His department was hit with the PUC mandate while it was upgrading Southern California Edison's customer service and back-office systems.

Now McMenamin is trying to roll out entirely new applications on top of that upgrade. "In some cases, we recognized we couldn't get full automation, so we launched a second project to do partially automated processes in time to the opening date," he says.

Some automation projects simply were dropped. For example, at a late date, Southern California Edison scrapped attempts to automate its meters because of cost and new competition.

OPPORTUNITY KNOCKS

That was great news for Enron Energy Services, which is staking much of its business on automated meter reading.

Tim Vail, Enron's vice president of new technology, says automated meter reading is vital because it's a foot in consumers' doors, that could lead to other sales.

Enron's meter-reading system has been ready for business clients since Jan. 1. When California's residential meter system is unbundled next January, the company plans to have the service available for home users.

The system uses Motorola devices to send readings via radio signal to an Oracle database every 15 minutes.

One beauty of the system is that the data can be mined to suggest customer efficiency tips to users. Then, through applications developed in-house, the system ties in to back-end accounting and billing systems, so those recommendations can be printed on customers' bills.

Enron rolled out its technology in a year. It's nearly impossible for utilities — and even their

unregulated divisions — to be so nimble.

"The existing utilities are awfully big and complex, which makes it difficult for them to make decisions," says David Cain, IS manager at the Electric Power Research Institute, a Palo Alto, Calif.-based consulting and research firm.

It doesn't help matters that in this market, prices fluctuate by the minute, tariffs and taxes differ from state to state, and customer volume is constantly changing as consumers play the switching game.

John Keast, chief information officer at PG&E Energy Services, the San Francisco-based unregulated subsidiary of holding company PG&E Corp., took a priority approach to developing new systems in a scant eight months.

That meant arming his forces so they could go forth and sell.

"This is a sales-driven organization," Keast says amid the hum of construction work on his unfinished 2nd-floor suite of offices. "We needed to get tools into the hands of our sales force."

Given the tight deadline, Keast both bought and built a World Wide Web-based client/server sales management system. His department integrated an off-the-shelf sales automation database tool from Aurora Software, Inc. in Santa Clara, Calif. According to PG&E, sales representatives who use that system have presold more than \$1 billion in business energy services contracts.

With phase one behind him, Keast is grappling with phase two, back-office development and support issues, which will continue into next year.

As Keast's staff creates bridges to integrate the sales automation package into a back-office SAP AG R/3 system for billing and account information, PG&E Energy Services staff will use interim solutions — rudimentary databases and Excel spreadsheets — for back-office accounting and human resources.

And then there are the details. In the midst of all those rollouts, Keast is staffing his IS shop while simultaneously attending to the hardware and software needs of new employees pouring in to a (and growing) field sales offices. "We're trying to keep up with a growth treadmill," he says.

THE COMPETITION

Utility spin-offs are up against not only mainstream players such as Enron, but also niche marketers such as Green Mountain Energy Resources. Those new guns require little more than an interface, a PC and a good slogan to set up shop.

"You're already paying the lowest price for en-

Click here for gas

Power deregulation is increasing consumers' need for information. Confusion over new carriers, switchers, services and bills calls for more than mass mailings and television ads.

To address that need, Southern California Edison, Pacific Gas & Electric Co. and San Diego Gas & Electric, California's dominant utilities, have partnered in www.energymarketplace.com, an Internet "retail shopping center" for natural gas.

Just click on your local utility and up pops a limited list of participating energy service providers. The site concentrates on natural gas sales to businesses and manufacturers — a high-return market segment.

More aggressive Web applications also are in the works that go beyond the utilities' shopping-mall approach and actually address billing and other transactional issues for business and home consumers of energy.

Enron, for example, is developing a site that will allow customers to mine their own energy-use information and check their bills. — Deborah Radcliff

ergy, the commodity, in your existing utility bill," says Julie Blunden, Green Mountain's vice president of customer services. "Anybody — power marketers or retailers included — who comes into the game now . . . can't compete directly on price. They have no margin. You must provide value above and beyond cost."

Green Mountain's spin is clean, renewable energy that appeals to the socially responsible, though it may actually cost more.

The start-up didn't want to tie itself up in technology and indeed has no in-house technical support. Instead, it turned to outsiders to develop and manage a customer operations system that links to nine suppliers and will support thousands of customer switches each day.

Unlike Green Mountain and other start-ups, utilities are encumbered by government scrutiny, according to Cain.

Moreover, utility spin-offs are under the PUC's microscope to make sure no dollars flow from regulated customers to the unregulated divisions.

For now, most players (Green Mountain excluded) are concentrating on winning lucrative business accounts, which constitute half of California's \$20 billion energy consumption market. Although the odds may seem to favor the newer players, things are in no way bleak for utility companies. Most consumers probably won't change their service to independents, leaving the utilities to service those accounts by default, according to Cain.

Service-oriented spin-offs, however, are under the gun. If they can't provide true added value to business consumers, they — and their expensive new systems — will be left out in the cold while their newborn competitors heat things up.

The ultimate outcome of energy deregulation will likely mirror the Big Bang experience of long-distance telephone company deregulation.

First will come an explosion of new players that will ultimately shrink, thanks to consolidations and acquisitions, to a handful of national players. □

Radcliff is a freelance writer in Northern California. Her Internet address is derad@pac.com.



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BY
LESLIE
GOFF

he wants to develop a piece of software so ingenious that it will forever alter the course of business.

One wants to be a chief information officer so enlightened and successful that she's featured on the cover of *Fortune*.

One wants to become a household name eternally associated with transforming common technology beliefs.

One wants to head the company that manages to do what Microsoft did to IBM.

They are just four of the determined young computer science students who will enter the information systems workforce by 2000. You certainly can't call them slackers. These four students were among the participants in the recent Annual ACM International Collegiate Programming Contest; three made the world finals. They competed against 1,249 other programming teams in 22 regional contests around the world. Of those teams, 54 went to the world finals in Atlanta in February.

NATHAN BRONSON, 23
Junior, Duke University, Durham, N.C.
Will graduate in May 1992 with a bachelor's in electrical engineering and computer science

 Bronson started programming at 14 when his parents' jobs took the family to Togo, Africa.

"It was a French-speaking country, but I couldn't speak French, so I didn't have a lot of friends," he recalls. "Plus, it was really hot, and the computer room was the only air-conditioned place around, so I spent a lot of time in there and learned Turbo Pascal 4.0."

Today, Bronson is also fluent in C++, Unix and Perl, and he's coming up to speed in Windows NT and Java. He's already held several information technology-related jobs.

Bronson provided user support and systems and network administration for a now-defunct Internet services provider, Cybernetics, in Charlotte, N.C. He was a founding member of Transworld Numerics, which developed a futures market trading model in C++ and Perl for a commodities trader based in Bermuda. And at the Institute for Defense Analysis, he had one unpaid and two paid internships doing research in computational number theory for a classified development project.

"I'm a perfectionist, so I'm good at keeping track of all the details and the intended and unintended consequences instead of glossing over them. That helps me write more robust, reliable code," Bronson says. "I'm good at dealing with that type of complexity. And I see myself as a good, creative problem-solver."

Programmer prodigies, page 75

programmer prodigies

CONTINUED FROM PAGE 73

Based on his experience, Bronsco says finance is an area where he could apply his problem-solving and math skills. Looking forward, he says, "I see myself as a research and development type, in a fringe vendor market, coming up with things that haven't been done before or new approaches to existing problems."

Bronsco says he expects that a career in IT will allow him the opportunity "to continue learning instead of just doing. I'd like to get into politics where I don't have to work all the time, and I'm willing to make sacrifices at this point so I can have more time later for mountain climbing and hiking."

If he achieves only one moment of greatness, he'd like to "come up with an idea — a paradigm shift — that once I come out with it, is so obvious, everyone wonders why they didn't think of it."

JOHN LARKIN, 22
Senior, Harvey Mudd College,
Claremont, Calif.

Will graduate this month with a bachelor's in math and computer science, and a minor in philosophy

Since he learned Basic at the ripe age of 8, developing games on an IBM PC Jr., Larkin has wasted no time picking up new skills.

He can program in C, C++, Unix, Perl, Assembly, Pascal and Ada. He's experienced in Windows 95, Windows NT, Novell, Mac OS, Linux, Sun OS, Solaris and HP/UX systems administration. He can take on Ethernet, 10Base-T, 100Base-T and Asynchronous Transfer Mode network administration. And he's spent his senior year developing the software that will provide the intelligence for a walking robot.

"I have a certain way of looking at and thinking about problems," Larkin says. "A math background helps a lot — the rigorous proofs, starting with simple assumptions and building on them. In programming, you start by trying to prove something and do it by writing code instead of theorems."

Last summer, Larkin had a paid internship on Project GlobalStar at cellular telephone company Qualcomm, Inc. in Boulder, Colo., where he was on a team developing a tool in C++ to debug cellular phones that use satellite signals. With graduation nearing, he's weighing job offers for software engineering positions at Qualcomm, Advanced Graphics, Inc. in Malvern, Pa.; and Ball Aerospace & Technologies Corp. in Boulder.

The salary offers, he says, were about

what he was expecting — averaging about \$50,000. In early March, he was leaning toward Qualcomm because of the location and the people he worked with last summer.

"Boulder has a lot of good things for me: world-class rock climbing, good cross-country skiing, mountains. Unlike here, there's no appreciable snow. And my girlfriend lives there — she's very important to me," Larkin says. "A couple of years ago, I would probably have chosen the most interesting work or the most money or a combination of those, but now they are secondary to quality of life. I'm no longer so interested in huge sums of money. There's no fun point in having it if you don't have a fun way of spending it."

One point in time, I wanted to be a household name like Einstein or Socates," Larkin says. "I don't know if I'll still be looking for that, but it would be very good to have thought about something in a sufficiently new and interesting way that I'd be associated with it from that point on."

ANN MARIE O'MEARA, 21
Junior, Duke University,
Durham, N.C.

Will graduate in May 1999 with a bachelor's in computer science

O'Meara learned Basic in a gifted-and-talented program in grade school, but her all-girls high school in Cleveland offered only a few computer classes. She helped form an after-school computer club, but she didn't program again until her freshman year at Duke.

Since then, O'Meara has been making up for lost time. Her proficiency in C++ and Java helped her win a place last summer in a competitive internship program in the electronic-commerce systems group at Ford Credit Co. in Dearborn, Mich.

"A lot of programming is just practice," she says. "[Sometimes] you just have to trace back through all your code for over an hour until you find what you did wrong. A lot of people would just give up at that point. You also need to think about abstract things because if you think of it from the start in terms of code, you'll miss the high-level design issues and the opportunity to design a better program."

At Ford Credit, O'Meara was on a cross-functional team of eight people who created an online registration form for an automatic account debit program. She also wrote Java utility classes for other World Wide Web applications.

O'Meara says she learned a lot at Ford about the nontechnical aspects of working in corporate IT. "You have lots of legal and operations issues related to putting a form like that out to the public," she says, "and we were also looking ahead to when it would be more automated, so there were a lot of security issues."

The teamwork that brought together systems, marketing and operations also prepared her for what to expect after college, she says. "IT professionals rarely work in a vacuum, so getting used to working with people who aren't computer people is important," she says.

Ford has invited O'Meara back this summer. She's also been woed for internships by several other companies, including IBM, AMS Consulting, Evans & Sutherland Computer Corp. and GTE Internetworking.

After graduation, she'll seek an applications development position and give herself time to choose between a management or technical career path, she says. She favors large companies because "they have a lot of employee programs." Depending on her choice, she'll pursue either an MBA or a master's in computer science. A company that doesn't offer tuition reimbursement has little chance of hiring her, she says.

"I want to be challenged. I want to be on the cutting edge of technology and make computers work better for people. I think we're only starting to realize what computers can do for us," O'Meara says. If she achieves only one moment of greatness, "I would love to be a CEO with my name in *Fortune* magazine. Or if I pursue the systems end, I'd like to invent some incredibly clever software that everyone wants to use and does the job better than any that came before it."

THOMAS WYNNE, 22
Senior, University of Arkansas,
Fayetteville, Ark.

Will graduate in December with a bachelor's in computer science

Wynne played around with Basic on a Commodore 64 when he was a kid, but he began seriously programming only as a college freshman. During his second semester, he used the language to create a database that tracks scores and statistics for a bowling league.

Wynne parlayed his newfound skills into a job developing ActiveX add-on modules for a patient care database and tracking system at a local medical software firm, Docs, Inc. located in

Springdale, Ark.

Over the past four years, Wynne has gained experience in C++, Windows 95, Windows NT, Unix, Linux, ActiveX, MS-Access and Visual C++ 5.0. Now he's learning various Java tools such as VisualAge, JBuilder and J++ as he researches potential new applications for Docs' Web site. "We're looking at how to tie together the product and the Web site, like enabling people to download the software or exchange templates online," he says.

Wynne wasn't sure what to major in at first, he says, so he registered for classes in computer science, business, history and music to determine his real interests.

"History was cool, but you're not going to become Bill Gates majoring in history," Wynne says. "Business was boring. Computer science was the most interesting because they'd assign you a project, and you could actually get on the computer and solve a problem and be doing what you'd be doing in real life."

Wynne considers his career choice fortunate, given the high demand for IT professionals. "I wasn't aware of the long-term opportunities when I chose the degree. I just chose the one that was most interesting to me. I like programming and discussing philosophies of programming."

When he starts his job search, he'll be looking for employers that "have the best benefits and realize a programmer can't work 80 hours a week," he says. Also high on his priority list are opportunities to participate in many types of projects, and to work at a company with the latest technology and a commitment to his continued education.

Wynne says he's more intrigued by product development than corporate IT "because it gives you a good feeling to see people getting benefits out of the product you created." He'd jump at the chance to get into video game development — he attends Siggraph every year — but adds that he could be persuaded to join the ranks of the right IT team. He's aiming for an above-average entry-level salary of more than \$50,000 because he's been working in the industry while attending school.

"I definitely want to move up the management ranks — you can't code forever," Wynne says. If he achieves only one moment of greatness, he'd like "to be known as the guy who brought down Bill Gates. The guy is still lacking, but if he brought down IBM, another company could bring him down any day now." □

Goff is a freelance writer in New York.

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REGIONAL SCOPE*Cleveland, Columbus and Pittsburgh*

MIDWESTERN MATCHMAKING

Times aren't quite so desperate here, so both IT employers and employees can be more picky in a relationship. Here's what each is looking for

BY JILL VITIELLO

IS SALARIES IN CLEVELAND, COLUMBUS AND PITTSBURGH

Title	Salary
CIO/vice president of IS	\$106,000
Director of IS	\$79,000
Project manager	\$68,000
Network administrator	\$59,000
LAN manager	\$51,000
Senior programmer/analyst	\$48,000
Computer operations manager	\$47,000
Programmer/analyst	\$44,000
PC technical support specialist	\$33,000
Computer operator	\$27,000

Source: CompTIA's 1997 Annual Salary Survey

MOST OF US want more — money, training, technology. And these days, it seems as if an information technology professional almost has to work at not landing all three in a new job.

But despite the pressure on managers to hire, the best job matches still "come down to talent and chemistry," says Debbie Reed, vice president of systems and programming at Dollar Bank in Pittsburgh. Here's what some hiring managers and information systems professionals in Pittsburgh, Cleveland and Columbus, Ohio, say they really look for in each other.

OPPORTUNITY:

THE RUST BELT ROCKS

Like everywhere else in the known universe, "the IS job market is outstanding in the Rust Belt," says Wiley Farler, managing director of Source Services. "Columbus is the best" among this trio of cities, he says.

Ohio's capital has plenty of IS jobs. The city recently unveiled a community-wide initiative called Tech Town. Part image campaign, part technology rollout, the initiative is meant to attract more high-tech companies to the area and provide citizens with free access to computers and the Internet.

Columbus was the first major U.S. city to appoint a chief technology officer and create a department of technology, says Steve Brennen, deputy chief of staff at the mayor's office.

As for Pittsburgh, *Yahoo Magazine* named it the 14th most wired city in the nation, based on how frequently residents use the Internet. Pittsburgh is home to more than 2,200 technology-intensive companies, including software engineering, industrial automation and mobile robotics, that employ more than 8,000 people.

Cobol programmers, networking experts, Internet-experienced professionals and programmers with track records

in SAP, PeopleSoft, C++ and Oracle are the most sought-after IS professionals in Cleveland, Columbus and Pittsburgh. Salaries range from about \$40,000 for help desk administrators to \$65,000 for Cobol programmers and \$80,000 to \$100,000 and more for people with experience in specialized applications, Farler says.

INCENTIVES: ADVANCEMENT AND ENVIRONMENT

Although demand for IS talent continues to outpace local supply, the desperation so obvious in other markets isn't apparent in these Midwestern cities.

IT managers usually can find qualified candidates in salary guidelines, often without the help of technical recruiters. Sign-on bonuses aren't ubiquitous, and benefits are fairly similar from company to company. So what do IS professionals look for when picking one employer over another?

"I was looking for a new challenge and an opportunity for advancement," says John Uhring, who joined Dollar Bank as a programmer/analyst last December. He also likes the 401(k) plan, business-canal direct code, free parking and gyro.

"The reason I started looking for a new job was for more

opportunity," says Aaron Marke, an applications analyst who joined Battelle Memorial Institute in Columbus last month. "Battelle offers the chance to work with the latest and greatest technology." The research and development firm also offered a sign-on bonus, help with relocation expenses, a 401(k) plan and flextime.

Jeff Basu, a senior programmer/analyst who joined Progressive Insurance Co. in Cleveland about a year ago, says, "I wasn't looking for a job, but when I came here, I was really impressed with the people and the atmosphere."

RECRUITING:

MATCHES MADE IN HEAVEN
To find the "right fit" candidate, Marc Brown, general manager of information services at Heinz U.S.A. in Pittsburgh, uses behavioral interviewing. "We ask the candidate about past situations and how they behaved. We want to know, What did they think and do? And how did it make them feel?" Brown says.

The best candidate is one who shows excitement about the company's business and is flexible about learning new technologies, he says.

"I'm impressed when someone has done research on the company," Reed says. "The candidate has to demonstrate that he or she is interested in the position. I don't like it when they sit back and wait for me to tell them about it."

Reed also looks for a combination of technical talent and a capacity for teamwork. "I need people who work well together, who can solve problems and who can turn to the person in the next cubicle and get help." □

Vitiello is a freelance writer in East Brunswick, N.J.

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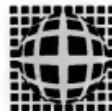
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Microsoft CEO Gates pulls out all the stops

CONTINUED FROM COVER 1

according to published reports last week that cited sources close to the matter. The Justice Department declined comment, and a Microsoft spokesman said the company "can't speculate" about any Justice Department action.

The wide-ranging lawsuit reportedly would accuse Microsoft of illegally bundling its *World Wide Web* browser with the Windows operating system.

Other charges are said to include forcing PC makers and online content providers into unfavorable contracts and interfering with the Java programming language. Those are the same complaints that have been foreseen since the Justice Department started the current investigation of Microsoft in September 1996 following a 1995 consent decree.

The immediate fallout of legal action would likely be a delay or block in the shipment of Windows 98, which is an upgrade slated to go to PC makers Friday and consumers June 25.

Hoping to avoid that, Microsoft last week asked a Federal appeals court to exempt Windows 98 from an order issued in December that required the company to stop shipping Windows 95 integrated with the Internet Explorer browser. The Justice Department opposed the motion. A ruling is due this week.

ONE LAST MEETING

Microsoft CEO Bill Gates also flew to Washington last week for the company's second audience in a month with Jeff Klein, the government's lead antitrust lawyer, to press his case. Yet published reports last week said Klein will proceed with a formal suit.

Also last week, the Redmond, Wash.-based vendor took the unusual step of holding a rally to urge an on-time shipment of Windows 98. Microsoft called on 60 PC software and hardware companies, people with disabilities, representatives of elderly computer users and a Harvard University economist to present its "leave us alone" message.

"We don't want any new laws," said Mike Pettit, executive director of ProComp, an anti-Microsoft lobbying group largely funded by Netscape and Sun. "We think Microsoft is breaking laws, and we want

port into our products, [which is] misguided," he said.

Gates said he feared for American jobs — indeed the entire U.S. economy — if Windows 98 is delayed. He said any government action that slows down Microsoft could open a hole in the U.S. economy that a foreign competitor might fill.

But the bigger issue at stake, according to a Microsoft spokesman, is "the ability of any company to define its own products and innovate based on new technology and what customers want."

However, a Computerworld survey of 43 IT executives revealed that 81% have no plans to buy Windows 98 in the next four months. If Microsoft separates the browser from the operating system, 79% said, there would be no change in their purchasing plans.

Microsoft is treating its antitrust headaches like a political campaign, said Jeffrey Pollock, a partner at Global Strategy Group, Inc., a political polling and consulting firm in New York. The key, he said, "is to get out as much positive information

about your candidate as possible. Microsoft is doing that."

For example, Microsoft last week publicized a survey it commissioned by a political polling company that found that 65% of 1,000 adults in the U.S. think it is a bad use of tax dollars for their state attorney general to file a suit that blocks the release of Windows 98.

But some strategies — including drafting a letter to Klein for other vendors to sign — might have set Microsoft two steps back, said Jim Richardson,

president of Organized Comedy in Sebastopol, Calif. Richardson coaches executives and politicians, among others. "It just reinforces the fact that Microsoft is a monopoly. These companies are writing the letter based on their own self interest," he said (see story below).

Microsoft's attempts to inject patriotic and economic fear into the debate have gone too far for some critics. Information technology products are a key driver of the U.S. economy, they said. But Microsoft is only one

POLITICAL MACHINES

According to many public opinion surveys, public opinion on both sides includes the following:

PRO-MICROSOFT

May 1

► Microsoft drafts a letter for 26 PC companies to sign and send to state attorneys general warning of dire economic effects if Windows 98 is delayed.

May 4

► A similar letter, also signed by Microsoft partners, is sent to the DOJ.

May 5

► Microsoft holds rally in New York for opponents of legal action against Windows 98 to show solidarity.

► Sen. Slade Gorton (R-Wash.) defends Microsoft to the Senate, saying the Rolling Stones' song "Satisfaction" aptly describes what the vendor does for its customers.

ANTI-MICROSOFT

April 20

► Netscape, Sun and some non-computer firms fund ProComp, a new lobbying group fronted by former federal Judge Robert Bork and former Sen. Bob Dole.

► Ralph Nader reiterates his opinion that the "Microsoft monopoly" must be stopped.

May 5

► ProComp leaders do counter-spin outside Microsoft rally.

► Sen. Orrin Hatch (R-Utah) warns Senate that Microsoft is "predatory" and says the theme song for Windows 98 should be the Stones' "Under My Thumb"; the theme for Windows 95 was the group's "Start Me Up."

Vendors walk fine antitrust line

► Reinining in Microsoft may constrain them, too

By Kim S. Nash

IN ATTACKING Microsoft Corp., many of the vendor's primary accusers risk bollixing up the roaming market from which they extract healthy sales and profits. And with federal and state antitrust suits looming, the threat is bigger than ever.

Take, for example, Netscape Communications Corp. and Sun Microsystems, Inc. Persists though they may be in their complaints against Microsoft to the U.S. Department of Justice. But the PC companies also rely on Microsoft software to sell their hardware.

In turning over the information the government wants, those companies could be contributing to an effort to rearrange the computer industry in ways no one can predict.

The Justice Department is ill-qualified to muck around in the information technology market, asserted Robert Levy, a senior fellow at The Cato Institute; a

libertarian think tank in Washington. Indeed, as much as Microsoft wanted to paint last week's Windows 98 media event as a rally to protect consumer choice and American jobs, the picture that emerged was one of hardware and software vendors guarding their own profits. Indeed, the vendor officials who spoke harped on the theme that their companies stand to lose a lot of money if Windows 98 is delayed.

Compaq, for example, was one of the first vendors to comply with a subpoena from the Justice Department to provide information about Microsoft's contracts. But Eckhard Pfeiffer, Compaq's CEO, not only sat next to Gates, but also was the first person from outside Microsoft to speak at last week's event.

"Compaq and Microsoft have made significant progress in bringing affordable computing to everyone," Pfeiffer said. "I don't think we can deprive

consumers of that tremendous value."

Bill Krause, CEO of peripheral maker Storm Technology, Inc., came closest to addressing the dichotomy. "I'm not here as an advocate for Microsoft," he said. "I'm here as an advocate for Windows 98."

The software, after all, represents a "tremendous opportunity" to sell add-on hardware, he said.

That makes sense to Lawrence J. White, an economist at New York University.

In an ideal world, PC makers would like to have competing companies offer the Windows operating system, to lessen their reliance on Microsoft. White said. But because that isn't a real option, the companies must maintain smooth relations with their sole supplier.

MORE ONLINE

► Computerworld's Rule to letters from the various camps in the Microsoft/DOJ antitrust debate can be found at www.computerworld.com/news under "Research Links: Microsoft battles."

The Back Page

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Dispatches & Images from the wings of the electronic frontier

ONE WORD AT A TIME

Glide the Quickdictionary scanner over a foreign word, and it automatically displays the English translation.

Seiko Instruments (www.seiko-usa-cpd.com/cpd) says the device, which holds 400,000 words and

idioms, costs about \$250 at Sharper

Image stores. It is available in

French, German,

Dutch,

Japanese,

Spanish

and Italian.

Virtual shopping for sunglasses

Hate those tiny mirrors atop the sunglasses rack? Get a "virtual preview" of how you'll look in different styles of Ray-Ban sunglasses at www.ray-ban.com. But first you have to send the company your photo, which is placed on a password-protected Web page for virtual shopping.

How to win at Monopoly

Tom Pridelli, a computer engineer and self-taught math geek, has uncovered the secrets to winning at Monopoly. In a herculean exercise to keep his analytical mind sharp, Pridelli used MathSoft's Mathcad software to figure out the probability of landing on each of the Monopoly squares. His 27-page report says the best strategy to own a Water Works, which is most frequently landed on than the Electric Co. The least landed on property is Baltic Ave. The most frequently landed on property is Illinois Ave., which makes it extremely profitable. Knowing the probabilities "does help quite a bit . . . and I usually win," Pridelli says, although he shares his knowledge with family and friends to help level the playing field. Next on his agenda: the number of armies needed to win the game of Risk.

Patent watch

Recently issued U.S. patents (number, inventor/inventor, date)

Computerized ear detector monitors physiological data signals to identify when a person experiences fear. The neural network system compares the signals with a stored stress profile and transmits an alarm if thresholds are exceeded. It could be used as a personal security alarm. [5,645,334, S. L. Andersen and J. O. Sorenson, Denmark, April 28]

Toggle switch that quickly turns off a PC and saves the active software and files in nonvolatile memory. Turning on the switch restores the computer to the same state as when it was last turned off. That takes a fraction of the time of a conventional PC boot-up and shutdown. [5,645,351, Yakov Topor, Israel, April 28]

Foot-operated, multidirectional input device that performs as a computer mouse or game joystick. [5,645,055, Flechicot, San Francisco, April 28]

Source: MacroPatent (www.macropatent.com)



Inside Lines

Should you file the suit? The bottom line?

The Microsoft hit the suit of Microsoft's Windows 98 will hold fast until in New York. Chief Operating Officer Bob Harford levied a fine charge with talk of "stealthy gathering in Washington and a number of state capitals" — a reference, perhaps, to lawmaker government interests. Another executive played the customer card, using a released photo of his 2-month-old son — with rays clouds and Baby Cup mode — in a Windows 98 desktop. He predicted that government interference in Microsoft's business would "thwart much in the gears of human progress."

Cables break the chain

As the scheduled date of Windows 98 gets closer, Internet providers are growing nervous. A chain letter has been circulating online that says Microsoft CEO Bill Gates will give \$100 and a free copy of the new operating system to anyone who forwards the letter to 1,000 others. In fact, Gates will give away tens of thousands of implants (Windows, the letter says). The Microsoft could probably afford it, but the letter is a hoax, said Michael Schmitz, director of information security at Microsoft. He said he has received a lot of these and unanswered questions phone calls related to the prints.

Enough said

Tom Cipolla, a spokesman for the CIA in Langley, Va., said there's no truth to a recent *Washington Post* news service story that says CIA agents have been advised to play their bibles early in December 1998, to keep cash on hand and to have extra Medicare available in case your new problems cause Medicare or ATM failures.

Light on the shark

Trying to avoid damage to your car services, Electronic Data Systems hired more than 100 programmers in the U.S. and India during the first quarter and will hire another 100 programmers this year. The EDS outsourcing package offers more than pay and performance incentives. Try "no hours" travel benefits, such as free dry cleaning and pet care, and a collision waiver covered in the year of the car's first work, that is.

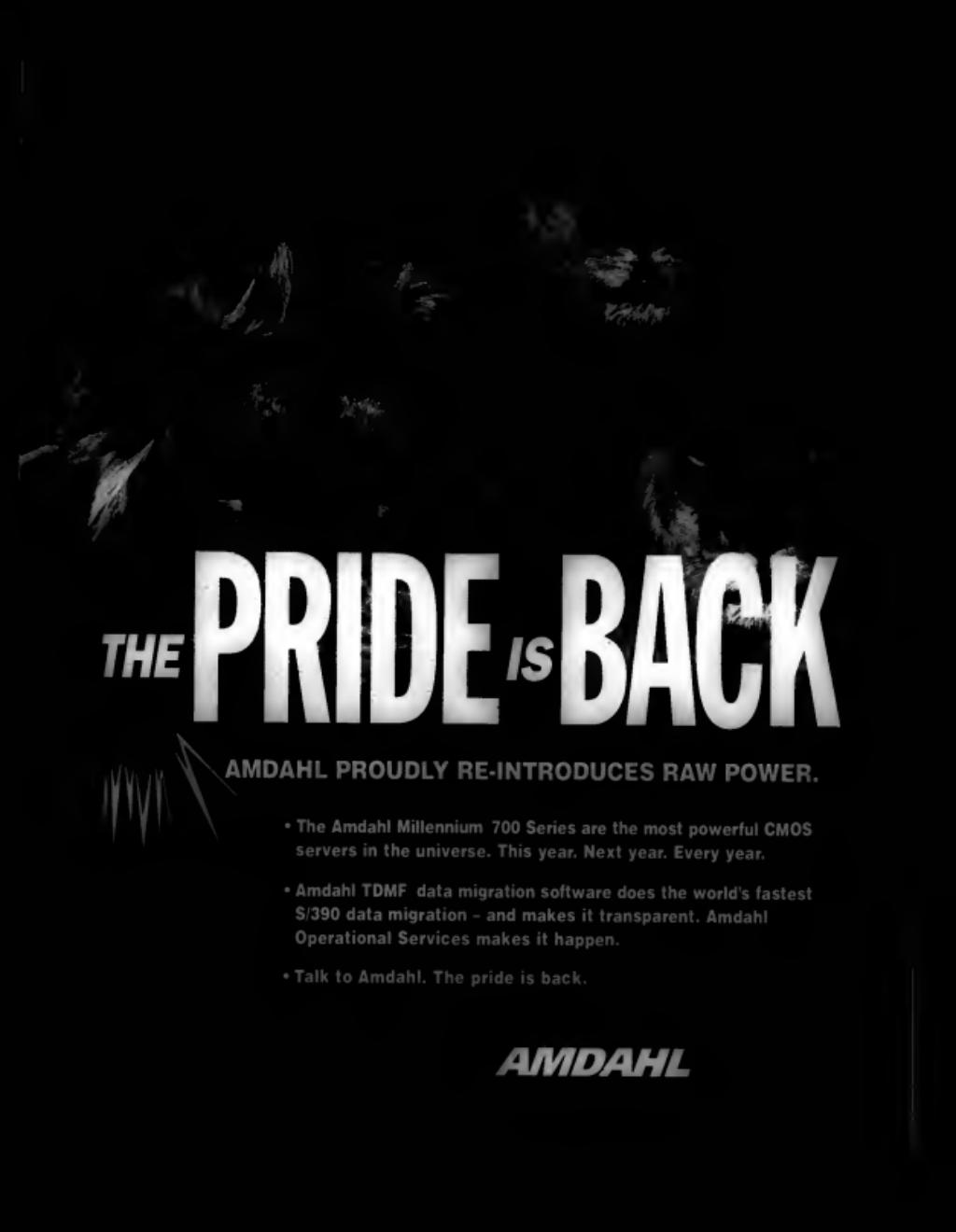
Now that's what I call real

It would have been unthinkable in the era of the Soviet Union. Russian President Boris Yeltsin is asked to take part in a joint nuclear test shot at year's end. EST Resources, an Atlanta-based communications firm (<http://www.estresources.com>), John Mihalik says. The Kremlin's home page will carry the classified test. The interests, you may recall, were developed as a U.S. military telecommunications project to withstand a Soviet nuclear attack.

Return fire

Compaq Group may have laid down the gauntlet. It issued a sharp rejoinder from officials that the database vendor was blindsided and had to file for bankruptcy just last week. At a press event last week in New York, Phoenix-based Compaq executive Tom O'Neil in a press conference, said they were forming a strategic alliance with the company. Compaq's press conference was "preemptive," he argued. "It was a Compaq press conference and 'preemptive' is the name department."

Three hundred financial services CIOs last week attended a three-day conference aboard the Queen Elizabeth II, which sailed out of New York and out of cell phone range. Most attendees accepted their fate, but some sought to stay connected. One gentleman sat on the quadrideck with a towel draped between his head and his antenna-equipped laptop so he could see his screen. Said a nearby attendee, "He must be pretty desperate to stay outside." He doesn't need to go to such lengths to tell us your news. Contact News Editor Patricia Keefe at (508) 861-8183 or patricia_keefe@cw.com.



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